

# ***Anxiety and Depression Among Children With Chronic Diseases***

*\*Alrawhaa A. Abo Amer; \*Yehia H. Abdel Maksod; \*\*Shewikar T. ElBakry, and \*\*Walaa H.M. El-Yamany*

*\*Pediatrics department \*\*Psychiatry department, Faculty of Medicine, Benha University*

## ***Abstract***

Psychiatric morbidity is defined as the presence of handicapping abnormalities of emotions, behavior and relationships that impede personal and social functioning. Accordingly, the present study was designed to argue such issue. A total number of 60 [32 males and 28 females] patients of ages ranging from 5 – 18 from pediatric department of Benha University Hospital and Mansoura University Pediatric Hospital, Egypt, were included in the present study. 40 were patients with chronic (more than one year) diseases as asthma (A) (9 males vs. 11 females), diabetes mellitus (DM) (11 males vs. 9 females) or chronic renal failure (CRF) on regular hemodialysis (12 males vs. 8 females) while the other 20 were clinically healthy ones. Each patient was subjected to full medical history of age, sex, education, socioeconomic state sleep pattern and sleep disorders, history of aggression, history of self-esteem, diagnosis with special emphasis on onset of disease, duration, frequency, complication and treatment. Psychological assessment was performed using Children Anxiety scale (Arabic version) and Children Depression Inventory (Arabic version). A written consent was signed by parents. The majorities of cases came from low socio-economic levels and are still in education. Present results for accompanying psychological morbidities verify low self-esteem in 25% A, 25% DM and 55% CRF; social isolation in 25% A, 30% DM and 20% CRF; sleep disorders in 40% A, 30% DM and 70% CRF; aggression in 10% A, 10% DM and 5% CRF and suicidal thinking in 20% of CRF children.

There was a significant increase in anxiety scores between chronic disease patients compared to control (P-value =0.028) with no significant difference between the different groups of chronic illnesses (50% in Asthma; 40% in DM; 50% in ESRD). Nevertheless, 25% of ESRD manifested severe levels of anxiety. There was a significant difference between male and female patients in anxiety among asthmatic and ESRD children as chronic diseased female show higher prevalence of anxiety than males. Anxiety disorders were directly proportional in children with increased age without improvement in disease symptoms being especially evident with asthmatic children yet it persistently increased with the other diseases (DM and CRF). Severity and longer duration of the disease revealed substantial increase in anxiety in patients with complications where 20% patients with severe ESRD, 10% complicated diabetic patients and 10% asthmatic patients developed severe levels of anxiety.

Concurrent results for depressive disorders revealed significant increase among chronic diseased patients (90%) compared to healthy ones where only 10% presented with mild depression. Yet there was no significant difference in depression among the three groups (P-

value=0.049) with significant increase in patients on regular hemodialysis where 80% recorded depression (55% mild, 15% moderate and 10% severe).

Chronic diseased female patients showed prevalence of depression than males, with a significant difference between female and male patients on regular dialysis where severe depression presented 10% and moderate 15% while males showed negative signs of depression. Depression was recorded to increase with increase in age of patients without any improvement in the disease symptoms in asthma and patients on regular dialysis. A substantial increase in depression development was validated as the disease proceeded for a longer duration i.e. more than one year. Similar increase was signified between patients on regular hemodialysis and asthmatic patients as 10% with severe ESRD developed severe depression.

In conclusion, the present study reveals that chronic diseased children have significantly more psychological distress than healthy ones.

It is highly recommended that patients with chronic disease should undergo continuous follow up by psychiatrists and medical specialists together with routine screening for developing anxiety and depression. This may lower the incidence of complications of Asthma, DM and end stage RF. Again cyclic meeting with parents of chronic diseased children is advisable to teach them how to deal with the psychological problems presenting keys for early detection and management of psychological disorders.

**Key words:** Anxiety; Depression; Diabetes Mellitus; Asthma; chronic renal failure; children;

## ***Introduction***

The term chronic illness refers to illnesses that require at least 6 months of continuous medical care, permanent adjustments to lifestyle and continuous behavioral adaptation to the unpredictable course of the illness. Typical examples of chronic illnesses diagnosed and managed in childhood and adolescence include asthma, diabetes, epilepsy, chronic renal failure, cystic fibrosis and a variety of cancers. The sufferer is required to accommodate physical changes, lifestyle restrictions, changes in social roles, complicated medical regimens, painful procedures and frequent medical appointments, while remaining prepared for the possibility of further acute crisis (1).

Asthma is a chronic inflammatory disease of the airways characterized by variable and recurring symptoms, reversible airflow obstruction and bronchospasm (2). It is clinically classified as moderate to severe persistent where frequency of symptoms are daily and nighttime symptoms range from once per week to frequent (3).

Common symptoms of asthma include wheezing, shortness of breath, chest tightness and coughing. Symptoms are often worse at night or in the early morning, or in response to exercise or cold air. Some people with asthma only rarely experience symptoms, usually in response to triggers, where as other may have marked persistent airflow obstruction (4).

Glucocorticoids are the most effective treatment available for long term control while inhaled forms or oral steroids may be needed (5). Long acting beta-adrenoceptor agonists, leukotriene antagonist and mast cell stabilizers are to be used as an alternative to inhaled glucocorticoids (6).

Diabetes Mellitus (DM Type I insulin dependent) is a metabolic disorder characterized by the presence of hyperglycemia due to defective insulin secretion, insulin action or both. It is associated with significant long term complications including damage, dysfunction and failure of various organs especially the kidneys, eyes and nerves and also with markedly increased risk of cardiovascular morbidity and mortality. It is thereby the most common endocrine disease and one of the most frequently encountered chronic disorders in childhood and adolescence (7). Prevalence is about 1/400-500 school aged children and is usually presented with a brief history of classic symptoms of polyuria, polydipsia and fatigue and weight loss.

Long term complications arise from the damaging of prolonged hyperglycemia and other metabolic consequences of insulin deficiency including retinopathy, cataracts, hypertension, progressive renal failure, early coronary artery disease, peripheral vascular disease, neuropathy and increased risk of infection. Treatment is mainly by insulin intake and injections.

On the other hand, chronic renal failure (CRF) is an insidious and irreversible condition that eventually progresses to end stage renal failure. It is an important cause of morbidity and mortality in children worldwide. The prevalence of CRF in children is reported to be around 18.5 – 58.3 /million children. However, underreporting due to lack of recognition may suggest an even higher prevalence in children (8). CRF is presented in five stages according to the severity of the disease (9). In end stage renal disease, hemodialysis and peritoneal dialysis are the 2 available forms of chronic dialysis therapy. CRF patients on regular hemodialysis are usually under treatment protocols including dietary supplements of energy and protein, electrolytes control through calcium supplementation for normal Ca/P ratio, active form of

Vitamin D, hypertension control, vitamin supplementation, anti-anemic drugs and psychic support.

During childhood, chronic physical illness confers an increased risk of emotional and behavioral disorders, although the majority of children and families successfully adapt to the diagnosis (*10*).

Anxiety is a common response to the uncertainty of chronic disease diagnosis and prognosis as well as to various aspects of treatment (*11*). A major medical crisis can be a contributing factor in the onset or exacerbation of an anxiety disorder (*12*). However the response may reach the level of a phobic anxiety disorder for some children.

Almost all anxiety disorders may be medically seen in ill children where children with such disorders who have a comorbid physical illness exhibit greater levels of emotional problems, more somatic complaints and more functional impairment (*13*).

Several disorders are associated with chronic illness in children as sleep disorder, suicide and behavioral problems. It is particularly important to assess sleep disorders in chronic diseased children where it has been recorded to be associated with behavioral problems, inattention, poor school performance and reduced health-related quality of life (*14*).

Sleep disorders in asthmatic patients are due to altered anatomy of the respiratory tract, increased upper airway adipose deposition, altered pharynx skeletal morphology and extension of pharyngeal airway leading to upper airway collapse (*15*). Again both hemodialysis and peritoneal dialysis patients have sleep disorders and tiredness being severely higher in hemodialysis (*16*).

Meanwhile, affective disorders, hopelessness, depression and depressive symptoms are associated with increased suicidal tendencies (*17*). Patients with CRF and on dialysis show higher incidence of suicide than those with other chronic medical conditions as asthma or DM (*18*).

Chronic illness has devastating influence on children thus leading to behavioral problems. At different stages of a child's development, the young child, unable to understand why the sickness has occurred, may assume it is a punishment for being bad thus become angry with doctors and parents for not being able to cure the illness. They are also prone to have teasing from their classmates and hence lead to decreased socialization (*19*). Moreover the school may not handle the issue in an appropriate manner thus increasing behavioral problems, avoidance and refusal of attending school, loneliness and feeling of being different from others (*20*).

Among the medically ill, depression is a common concern accounting for half of the identified psychopathology (*21 and 22*) where depression of all degrees occur in at least 25% (*23*).

Childhood depression seems to be evident at earlier ages in successive cohorts and often occurs with co-morbid psychiatric disorders, increased risk for suicide; substance abuse and behavioral problems (*24*).

Anxiety and major depressive disorders are often comorbid with each other and are commonly associated with other psychiatric disorders and coexisting with long-standing chronic medical conditions. Yet, effective recognition and treatment of anxiety and depression may be associated with functional improvement in the medical disorder (*25*).

Anxiety and Depression are closely related to asthma (*26*) where estimates of psychopathology in severe asthmatics ranges from 30 -63% (*27*). Psychological stress may

follow screening for diabetes as it may initiate or worsen hyperglycemia (28). A variety of psychological distress can occur when DM is diagnosed as denial, anger, guilt, reactive depression and finally acceptance (29). It may follow screening for diabetes where acting through the hypothalamo-pituitary-adrenal axis, stress may worsen hyperglycemia (28).

Children with CRF, on the other hand, often suffer from growth retardation and bone deformity due to osteodystrophy. Stigmata of hemodialysis therapy include multiple scars, needle puncture marks, and disfiguring fistula or arteriovenous shunts. These problems are often exacerbated by the delay in the emergence of secondary sex characteristics that often accompany uremia. These negative changes in body image exacerbate the child's feeling of being different and result in alienation of the peer group thus more liable to develop psychiatric morbidity (30; 31; 32 and 33). Another possibility of increased physiological vulnerability to maladjustment is the side effects from chronic exposure to medications that these children have (34).

Unfortunately, very few pediatric data are available that validate the use of standard depression rating scales in the patient group. There are currently several clinical investigations ongoing to develop and validate a scale for medical ill children (35).

### *Patients and Methods*

A total number of 60 [32 males and 28 females] patients of ages ranging from 5 – 18 from pediatric department of Benha University Hospital and Mansoura University Pediatric Hospital, Egypt, were included in the present study. 60 were patients with chronic (more than one year) diseases as asthma, diabetes mellitus or chronic renal failure on regular hemodialysis while another 20 were clinically healthy ones of matching age, sex and economical status. All children and parents were subjected to:-

1- Full medical history (age, sex, education, socioeconomic state (36), sleep pattern and sleep disorders, history of aggression, history of self-esteem, diagnosis with special emphasis on onset of disease, duration, frequency, complication and treatment.

2- Assessment of psychological distress by using:-

a) Children Anxiety scale Arabic version (37).

The scale consists of 53 items with yes or no answers measuring physiological, behavioral and verbal measures where yes receives one point and no receives 0 point less than 18 scores mild, 19 - 28 moderate and more than 29 severe status (38).

b) Children Depression Inventory (CDI) Arabic version (39)

The scale includes 27 items with three choices (0-2) for severity for severity of symptoms according to the following table:-

Exclusion criteria of children included:-

- children suffering from the illnesses that incur special impact on quality of life
- children with recent onset of disease i.e. less than one year.
- children with more than 3 degree on lie scale of anxiety.
- extreme socioeconomic level.
- absence of parents due to divorce or death.
- mental retardation among diseased children.

A written consent was signed by parents before the commencement of the study. Obtained results were statistically analyzed through mean, SE, T-test, Chi-square and ANOVA using SPSS V17 software computer package.

## Results

### 1- Demographic Studies:-

In the present study the age range among children in each disease category was as follows:-

**Table 1:** Age Range among children with chronic diseases.

Demographic data of sex, socioeconomic level and education level are presented in Table 2:

**Table 2:** Demographic data among children with chronic diseases.

Several accompanying symptoms were also assessed among diseased children including self-esteem, social isolation, aggression, sleep disorders and suicidal thoughts (Table 3).

**Table 3:** Incidence of other psychological morbidities in disease children

Low self-esteem and obvious sleep disorders were among the highest accompanying symptoms especially in CRF patients followed by asthma and lowest in DM.

### 2- Psychological Distress:-

#### a) Anxiety Levels

Table 4 and figure 1 present results of anxiety as measured by the Arabic version of children anxiety scale from both males and females.

**Table 4:** Comparison of anxiety between normal and children with different chronic diseases

As regards the implementation of age factor the following data were perceived (Table 5 and figure 2)

**Table 5:** Effect of age on anxiety between normal and children with different chronic diseases

Presence of medical complications from the three studied diseases had an impact on the level of anxiety among children. Results are presented in table 6 and figure 3.

**Table 6:** Effect of complication on anxiety between normal and children with different chronic diseases.

### Children Depression Inventory (CDI):

Levels of depression were hereby analyzed by the Arabic version of CDI where recorded results are viewed in table 7 and figure 4 comparing between male, female and control levels of depression.

**Table 7:** Comparison of depression between normal and children with different chronic diseases.

Again age range had an impact and was also included in the study as indicated by table 8 and figure 5.

**Table 8:**Effect of age on depression between normal and children with different chronic diseases.

Complications from the diseases imposed positive effects on the levels of depression according to data given in Table 9 and graphically shown in figure 6.

**Table 9:** Effect of complication on depression between normal and children with different chronic diseases.

### *Discussion*

The interaction between illness and psychological adjustment is better conceptualized as complex system of feedback loops rather than a simple unidirectional influence. While chronic illness in childhood and adolescence may increase the risk of emotional and behavioral problems, these may in turn have a profound influence on the morbidity and even mortality associated with the physical illness (24).

Chronic illness in children has devastating influence on the child and his family. The child has to cope with illness, medication and its influence on his development. Consequently a large number of these children develop emotional disorders which influence the course and outcome of physical disorder.

Presently, the age of included patients together with the normal controls ranged between 5 – 18 years [32 males and 28 females]. The majorities of cases came from low socio-economic levels and are still in education.

Several psychological morbidities accompanied the present studied cases. In Diabetic children, low self-esteem was found to be 25%, social isolation in 30%, sleep disorders in 30%, aggression in 10% and suicidal thinking in only one patient. In Asthma, low esteem was recorded in 25% of the patients, social isolation in 25% sleep disorders in 40%, and aggression in 10%. Patients on regular hemodialysis have the upper hand in suffering from low self-esteem (55%); social isolation (20%), sleep disorders (70%); aggression (5%) and suicidal thinking (20%). Sometimes these children are unable to understand why they are sick and believe it is some sort of punishment thus become angry and resentfull.

While improvements in Hemodialysis techniques result in prolongation of the life course of patients, these patients become dependent on dialysis procedures as part of their daily lives and they require the continuous support of medical personnel, their family and relatives. These dependency life changes can lead to depression, anxiety, decreased quality of life as well as loss of self-esteem (40).

Psychological distress mainly anxiety and depression among children with chronic diseases was presently assessed. There was a significant increase in anxiety scores between chronic disease patients compared to control (P-value =0.028) yet there was no significant difference between the different groups of chronic illnesses. Mostly, levels of anxiety recorded

moderate levels (50% in Asthma; 40% in DM; 50% in ESRD). Nevertheless, 25% of ESRD manifested severe levels of anxiety. Similarly *Cukor et al* (33) reported 46% prevalence of anxiety disorders in a sample of hemodialysis patients. Moreover these children become more aware of their difference from others regarding diet or activity levels and the impaired functional status. Another reason for this distress was the amount of time required for medical needs, frequent hospitalization and the severity and complications of the illness. The high representation of severe anxiety among ESRF may be due to the fact that hemodialysis therapy includes multiple scars, needle punctures, disfiguring fistula and Arteriovenous shunts which all have devastating effects on the child. Change in life style and the medications exposure could be a factor for the severe anxiety accompanying the chronic diseases.

Separation anxiety concerning separation from home or from those to whom the individual is attached is most often seen in younger children and in children with prolonged hospitalization (11). They may experience nightmares, be terrified that some calamity will befall them or experience physical symptoms as headaches and nausea eventually leading to post-traumatic stress disorders.

Compared to other chronic conditions, children with Asthma are rather at higher risk for psychological problems, especially internalizing problems (anxiety and depression) and psychiatric disorders (41). In addition, exposure to stress and strong emotions can exacerbate asthma thus rendering the patient to an increased vulnerability towards development of anxiety disorders (42) Co-morbid psychiatric disorders have been also linked to more severe asthma, prolonged hospitalization and increased use of steroids (43). Others additional factors would be the frequent admission to hospital, inability to work and limitations in other activities (44).

Taking the factor of sex into consideration, there was a significant difference between male and female patients in anxiety among asthmatic and ESRD children as chronic diseased female ones show higher prevalence of anxiety than males. These results came in accordance with those reported by *Lock and Barrett* (45) and *Allen et al* (46).

As regards to age, anxiety disorders seem to be directly proportional in children with increased age without improvement in disease symptoms. This was especially more evident with asthmatic children yet it persistently increased with the other diseases (DM and CRF).

The longer duration of the disease was an additional factor for the higher significant increase in the development of anxiety. Severity of the disease revealed substantial increase in anxiety in patients with complications 4(20%) patients with severe ESRD, 2(10%) complicated diabetic patients and 2(10%) asthmatic patients developed severe levels of anxiety.

Considering that behavioral problems of children and adolescent with asthma such as depression, anxiety, sleep disorders, social isolation, or aggression make asthma management more difficult, an optimal treatment of patients with asthma should address the issue of comorbid emotional and/or behavioral symptoms (47).

Meanwhile the anxiety symptoms were higher with the increase in age without improvement in symptoms of the disease and the longer the duration was. Furthermore there was a significant increase in anxiety levels as severe anxiety was more represented with the presence of complications (20% of CRF; 10% of diabetics and 10 of the asthmatics).

Concurrent results for depressive disorders revealed significant increase among chronic diseased patients (90%) compared to healthy ones where only 10% presented with mild depression. Yet there was no significant difference in depression among the three groups (P-



value=0.049) with significant increase in patients on regular hemodialysis where 80% recorded depression (55% mild, 15% moderate and 10% severe). These results were concomitant with *Mollaoglu (48)* who reported depression rate of 62% in Turkey, *Anees et al (49)* depression rate of 72% in Pakistan, *Cukor et al (50)* depression rate of 20% in Central Brooklyn and *Hedayati et al (51)* depression rate of 27% in U.S.A. Nevertheless, the wide variation in results may be due to the different types of assessment undertaken for depression and socioeconomic factors affecting patients in different geographical regions.

Routine of dialysis treatment might have had its impact upon the feeling of hopelessness that, in hand may induce episodes of depression (52). Another factor may be due to the delay in appearance of 2ry sexual characters, the decrease in physical health, the fact that they are dependent on others, having their life in danger or the change in the life style all contribute to the presence of depression among such unfortunate group.

Records of depression in asthmatic children were 25% mild and 10% moderate. Probably the medications and the repeated hospitalizations play a role in depression.

While in the diabetics 15% mild and 10% moderate depression was recorded. Poor glycemic control in pediatric type I DM is associated with lower socioeconomic status and depression. The probability of depression increases as glycemic control worsens. Accordingly, screening for depression should be routinely carried out in patients with type I DM targeting patients with deteriorating glycemic control (53).

Considering the sex of the patients, there was a difference between male and female children in depressive disorders as chronic diseased female patients showed a higher prevalence of depression than males, with a significant difference between female and male patients on regular dialysis where severe depression presented 10% and moderate 15% while males showed negative signs of depression. This agrees with *Allen et al (46)* who reported that females are twice as males to have experienced a major depressive episode. Although it is unknown why this occurs yet some experts find young male's airway size to be smaller when compared to the female's airway, which may contribute to increased risk of wheezing after a cold or other viral infection.

On the other hand, *Bakr et al (54)* who carried out a study in Egypt on children with CRF reported that there was no correlation with gender. The difference was not significant between male and female patients in asthmatic and diabetic groups.

Depression was recorded to increase with increase in age of patients without any improvement in the disease symptoms in asthma and patients on regular dialysis. Nevertheless, *Bakr et al (54)* related no relation between neither depression nor anxiety and age.

A substantial increase in depression development was validated as the disease proceeded for a longer duration i.e. more than one year. Similar increase was signified between patients on regular hemodialysis and asthmatic patients as 10% with severe ESRD developed severe depression. Again increase in anxiety and depression between chronic diseased patients non-compliant to treatment was hereby manifested.

*Glazebrook et al (55)* reported that two-thirds of children with asthma stated that asthma stopped them from doing sports and limited their activity based on reports of an average of two fewer activities per day than children without asthma. Also the lifestyle changes that are made by patients with CRD are numerous. Changes in image caused by edema, skin changes and access devices lead to further anxiety and depression (31). These

observations may be explained by the fact that children on dialysis experience more distressing physical symptoms, more medications and dependence on machines that could malfunction at any time. In addition they receive more attention from physicians and parents meaning more fostered dependency, thus decreasing their functionality. Accordingly, they realize that their physical health and even their lives are in danger. This alarms and augments their psychological resources to cope with these stresses (56).

Also the awareness of the morbidity and mortality and the fear of death are important and may result in risk taking behaviors, antisocial behavior, avoidance and school refusal.

In conclusion, the present study reveals that chronic diseased children have significantly more psychological distress than healthy ones. Under recognition of psychological disorders is a major concern in chronic diseased children. Nevertheless, treatment of such disorders in chronic diseased patients has received little attention particularly with respect to psychological intervention.

It is highly recommended that patients with chronic disease should undergo continuous follow up by psychiatrists and medical specialists together with routine screening for developing anxiety and depression. This may lower the incidence of complications of Asthma, DM and end stage RF. Again cyclic meeting with parents of chronic diseased children is advisable to teach them how to deal with the psychological problems presenting keys for early detection and management of psychological disorders.

## List of Tables

**Table 1:** Age Range among children with chronic diseases.

	Asthma	Diabetes Mellitus	Chronic renal failure	ANOVA	
				F-test	P-value
Range	5 – 12	5 – 16	8 – 17	17.325	0.009
Mean ±SD	8 ±1.95	10.95±3.47	14.5±2.58		

**Table 2:** Demographic data among children with chronic diseases.

		Asthma	Diabetes Mellitus	Chronic renal failure	Control	F-test	P-value
Sex	Male	9	11	12	10	0.14	0.93
		45%	55%	60%	50%		
	Female	11	9	8	10		
		55%	45%	40%	50%		
Socio-economic level	low	17	16	19	12	4.24	0.02*
		85%	80%	95%	60%		
	moderate	3	4	1	8		
		15%	20%	5%	40%		
Education level	Never joined school	0	1	1	0	5.3	0.03*
		0%	5%	5%	0%		
	discontinued	2	2	7	0		
		10%	10%	35%	0%		
	Still at school	18	17	12	20		
		90%	85%	60%	100%		

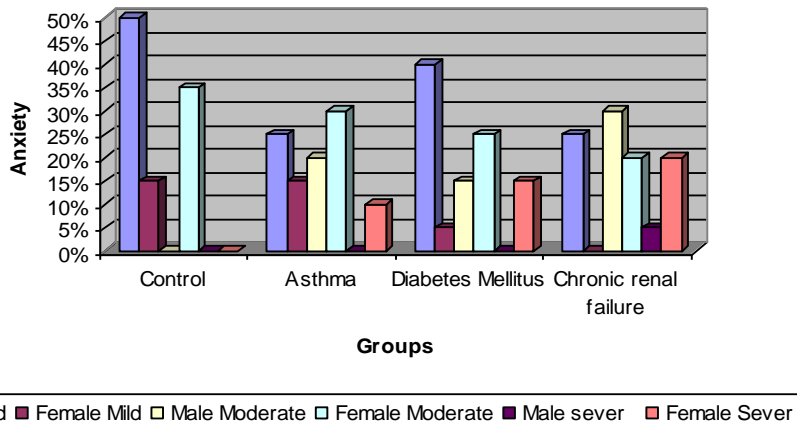
**Table 3:** Incidence of other psychological morbidities in disease children

	Asthma		Diabetes Mellitus		Chronic renal failure		Chi-square	
	N	%	N	%	N	%	X <sup>2</sup>	P-value
Low self esteem	5	25	5	25	11	55	6.33	0.03*
Social isolation	5	25	6	30	4	20	0.53	0.76
Aggression	2	10	2	10	1	5	0.44	0.8
Sleep disorders	8	40	6	30	14	70	6.96	0.03*
Suicidal thoughts	0	0	1	5	4	20	5.9	0.04*

**Table 4:** Comparison of anxiety between normal and children with different chronic diseases

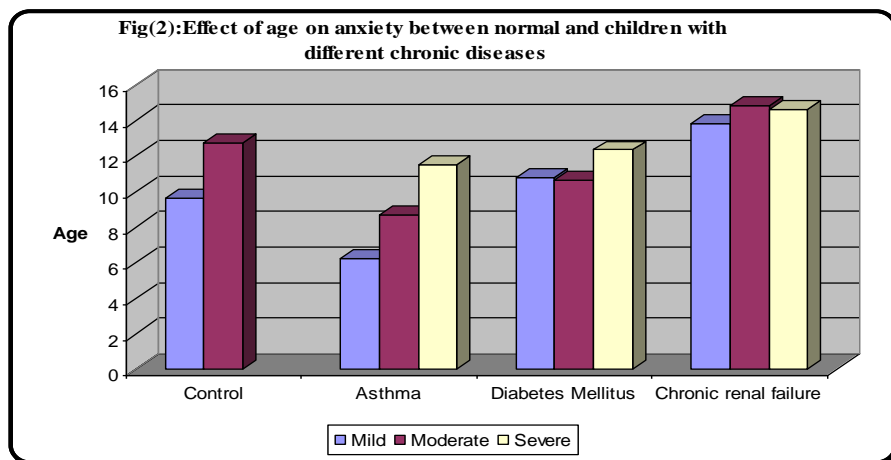
Groups	Anxiety	Sex						Chi-square	
		Male		Female		Total		X <sup>2</sup>	P-value
		N	%	N	%	N	%		
Asthma	Mild	5	25%	3	15%	8	40%	2.93	0.05*
	Moderate	4	20%	6	30%	10	50%		
	Severe	0	0%	2	10%	2	10%		
Diabetes Mellitus	Mild	8	40%	1	5%	9	45%	1.15	0.54
	Moderate	3	15%	5	25%	8	40%		
	Severe	0	0%	3	15%	3	15%		
Chronic renal failure	Mild	5	25%	0	0%	5	25%	2.63	0.04*
	Moderate	6	30%	4	20%	10	50%		
	Severe	1	5%	4	20%	5	25%		
Control	Mild	10	50%	3	15%	13	65%	2.84	0.08
	Severe	0	0%	7	35%	7	35%		

**Fig (1):** Comparison of anxiety between normal and children with different chronic diseases



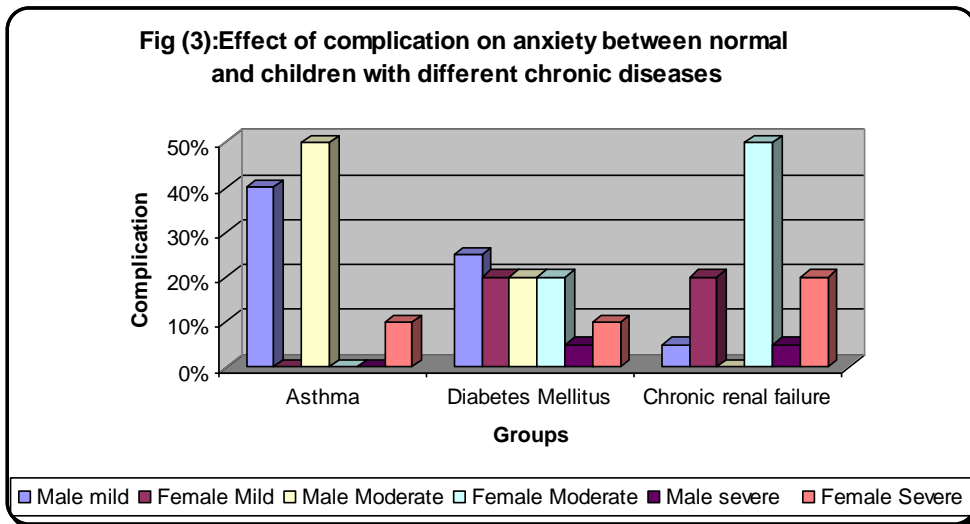
**Table 5:** Effect of age on anxiety between normal and children with different chronic diseases

Condition	Anxiety	Age		ANOVA	
		Range	Mean $\pm$ SD	f	P-Value
Asthma	Mild	5 - 7	6.25 $\pm$ 0.87	25.31	<0.001*
	Moderate	7 - 10	8.7 $\pm$ 1.16		
	Severe	11 - 12	11.5 $\pm$ 0.71		
Diabetes Mellitus	Mild	5 - 16	10.78 $\pm$ 3.9	0.26	0.77
	Moderate	6 - 14	10.63 $\pm$ 3.29		
	Severe	9 - 16	12.33 $\pm$ 3.51		
Chronic Renal Failure	Mild	8 - 17	13.8 $\pm$ 3.77	0.23	0.79
	Moderate	12 - 17	14.8 $\pm$ 1.55		
	Severe	9 - 17	14.6 $\pm$ 3.36		
Control	Mild	5 - 16	9.62 $\pm$ 3.64	3.74	0.07
	Moderate	9 - 17	12.71 $\pm$ 2.93		



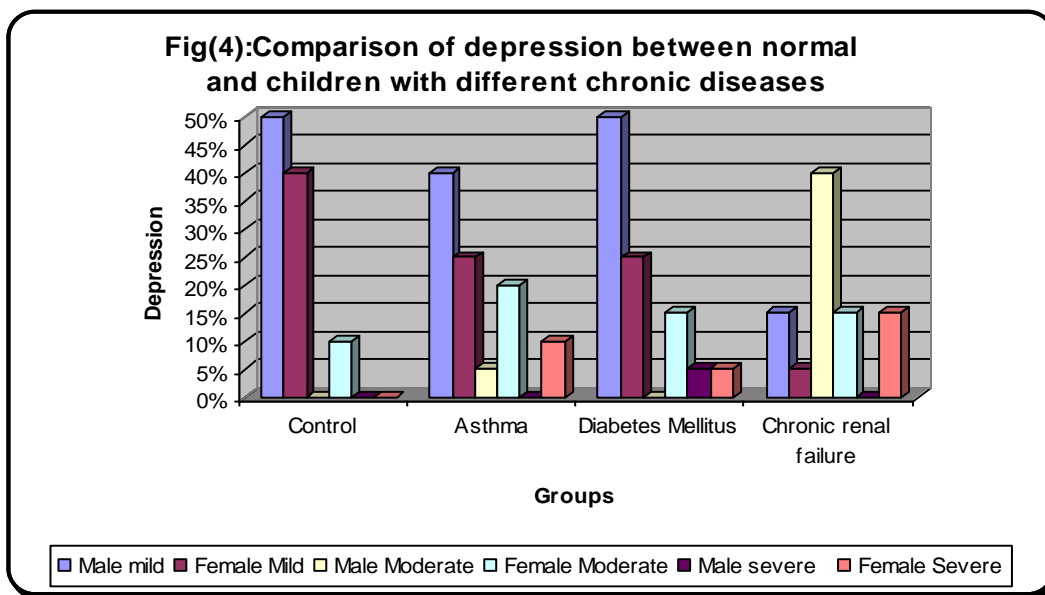
**Table 6:** Effect of complication on anxiety between normal and children with different chronic diseases

Groups	Anxiety	Complications						Chi-square	
		(-ve)		(+ve)		Total		X <sup>2</sup>	P-value
		N	%	N	%	N	%		
Asthma	Mild	8	40%	0	0%	8	40%	20.25	<0.001*
	Moderate	10	50%	0	0%	10	50%		
	Severe	0	0%	2	10%	2	10%		
Diabetes Mellitus	Mild	5	25%	4	20%	9	45%	1.87	0.050*
	Moderate	4	20%	4	20%	8	40%		
	Severe	1	5%	2	10%	3	15%		
Chronic renal failure	Mild	1	5%	4	20%	5	25%	2.64	0.049*
	Moderate	0	0%	10	50%	10	50%		
	Severe	1	5%	4	20%	5	25%		



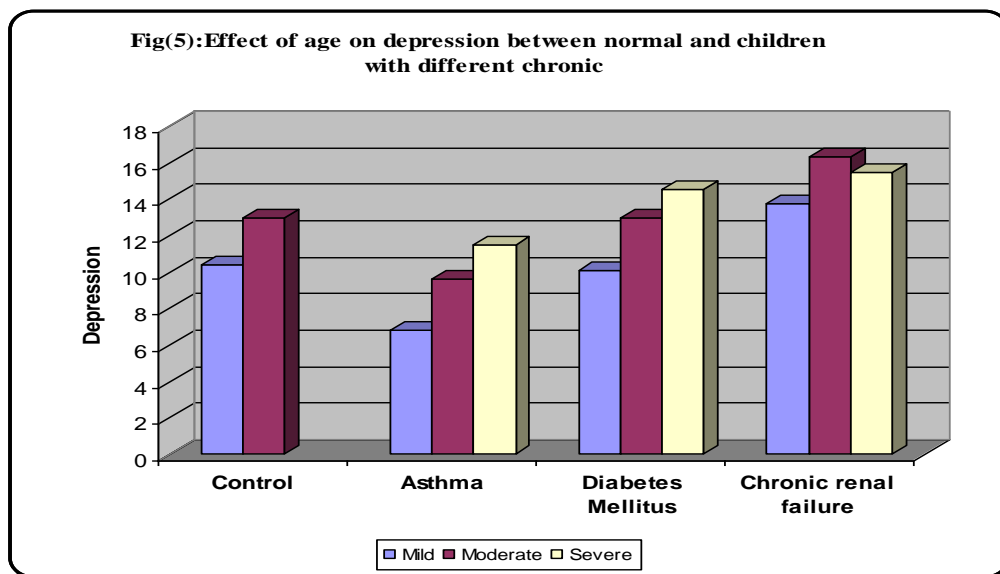
**Table 7:** Comparison of depression between normal and children with different chronic diseases

Groups	Depression	Sex						Chi-square	
		Male		Female		Total		X <sup>2</sup>	P-value
		N	%	N	%	N	%		
Asthma	No	8	40%	5	25%	13	65%	1.54	0.47
	Mild	1	5%	4	20%	5	25%		
	Moderate	0	0%	2	10%	2	10%		
Diabetes Mellitus	No	10	50%	5	25%	15	75%	1.50	0.25
	Mild	0	0%	3	15%	3	15%		
	Moderate	1	5%	1	5%	2	10%		
Chronic renal failure	No	3	15%	1	5%	4	20%	2.60	0.031*
	Mild	8	40%	3	15%	11	55%		
	Moderate	0	0%	3	15%	3	15%		
	Severe	0	0%	2	10%	2	10%		
Control	No	10	50%	8	40%	18	90%	1.49	0.27
	Mild	0	0%	2	10%	2	10%		



**Table 8:**Effect of age on depression between normal and children with different chronic diseases

Condition	Depression	Age		ANOVA	
		Range	Mean $\pm$ SD	f	P-Value
Asthma	Mild	5 - 9	6.85 $\pm$ 1.14	26.69	<0.001*
	Moderate	9 - 10	9.6 $\pm$ 0.55		
	Severe	11 - 12	11.5 $\pm$ 0.71		
Diabetes Mellitus	Mild	5 - 15	10.07 $\pm$ 3.26	2.35	0.13
	Moderate	9 - 16	13.0 $\pm$ 3.61		
	Severe	13 - 16	14.5 $\pm$ 2.12		
Chronic Renal Failure	No	14 - 16	14.75 $\pm$ 0.96	2.64	0.03*
	Mild	8 - 17	13.73 $\pm$ 3.17		
	Moderate	16 - 17	16.33 $\pm$ 0.58		
	Severe	14 - 17	15.5 $\pm$ 2.12		
Control	Mild	5 - 16	10.44 $\pm$ 3.51	0.87	0.36
	Moderate	9 - 17	13 $\pm$ 5.66		

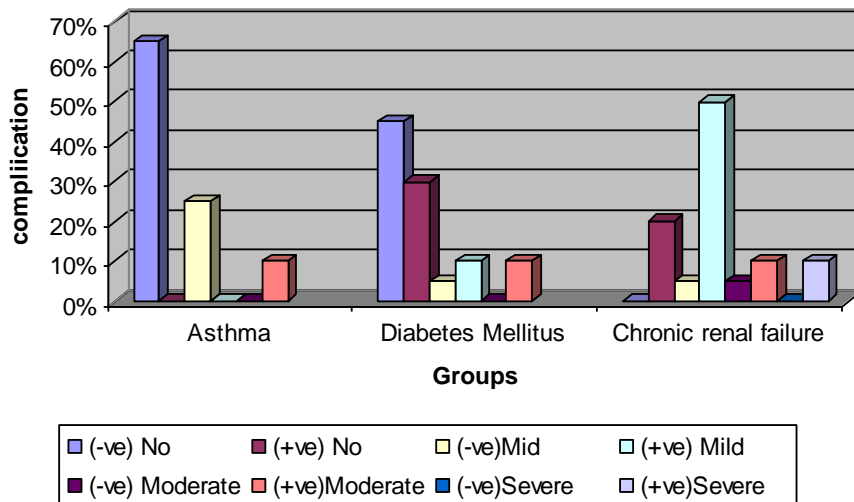




**Table 9:** Effect of complication on depression between normal and children with different chronic diseases

Groups	Depression	Complications							
		(-ve)		(+ve)		Total		Chi-square	
		N	%	N	%	N	%	X <sup>2</sup>	P-value
Asthma	No	13	65%	0	0%	13	65%	15.36	0.002*
	Mild	5	25%	0	0%	5	25%		
	Moderate	0	0%	2	10%	2	10%		
Diabetes Mellitus	No	9	45%	6	30%	15	75%	2.93	0.23
	Mild	1	5%	2	10%	3	15%		
	Moderate	0	0%	2	10%	2	10%		
Chronic renal failure	No	0	0%	4	20%	4	20%	2.1	0.03*
	Mild	1	5%	10	50%	11	55%		
	Moderate	1	5%	2	10%	3	15%		
	Severe	0	0%	2	10%	2	10%		

**Fig(6):**Effect of complication on depression between normal and children with different chronic diseases



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القلق والإكتئاب بين الأطفال المصابون بأمراض مزمنة

يتم تعريف المرض النفسي بأنه وجود تشوهات المعوقة في السلوك والمشاعر والعلاقات التي تعرقل الوظائف الشخصية والاجتماعية. وفقا لذلك، تم تصميم هذه الدراسة لمناقشة هذه القضية من هذا القبيل. وقد أدرج عدد 60 [32 ذكور و 28 اناث] من المرضى الذين تتراوح أعمارهم ما بين 5 – 17 سنة من قسم طب الأطفال في مستشفى جامعة بنها ومستشفى منصوره الجامعي للأطفال بمصر، في هذه الدراسة كان 40 مريضا يعانون من أمراض مزمنة (أكثر من سنة واحدة) مثل الربو (A) (ذكور 9 مقابل الإناث 11)، داء السكري (DM) (ذكور 11 مقابل الإناث 9) أو الفشل الكلوي المزمن (CRF) على نظام غسيل كلوي (ذكور 12 مقابل الإناث 8) بينما ال 20 الأخرى كانت من الأصحاء. خضع كل مريض إلى أخذ التاريخ الطبي الكامل من العمر، والجنس، والتعليم، والحالة الاقتصادية والاجتماعية، نمط النوم، واضطرابات النوم، وتاريخ الأعمال العدوانية، وتاريخ احترام الذات، والتشخيص مع التركيز بشكل خاص على بدء المرض والمدة، وتكراره ومضاعفاته والعلاج. تم إجراء التقييم النفسي للأطفال باستخدام مقياس القلق للأطفال (النسخة العربية) ومقياس الاكتئاب للأطفال (النسخة العربية). وتم التوقيع على موافقة خطية من قبل والديهم. وجاءت غالبية الحالات من المستويات الاجتماعية والاقتصادية المنخفضة وما زالوا في مجال التعليم. وتؤكد النتائج الحالية للأمراض النفسية المصاحبة وجود عدم ثقة بالنفس في 25% من حالات مرض الربو، 25% في مرضى السكري، 55% من مرضى الفشل الكلوي؛ العزلة الاجتماعية في 25% من مرضى الربو، 20% من مرضى السكري، 20% من مرضى الفشل الكلوي؛ اضطرابات النوم في 40% من مرضى الربو، 30% من مرضى السكري، 70% من مرضى الفشل الكلوي؛ العدوانية في 10% من مرضى السكري، 10% من مرضى السكري، 5% من مرضى الفشل الكلوي؛ أفكار انتحارية في 20% من مرضى الفشل الكلوي

كانت هناك زيادة كبيرة في درجات القلق بين المرضى الذين يعانون من الأمراض المزمنة ( $P = 0.028$  قيمة) مع عدم وجود فرق كبير بين المجموعات المختلفة من الأمراض المزمنة (50% في الربو، و 40% في السكري، و 50% في الداء الكلوي بمراحله الأخيرة). ومع ذلك، فقد عانى 25% من مرضى الداء الكلوي بمراحله الأخيرة بمستويات شديدة من القلق. كان هناك فرق كبير بين المرضى من الذكور والإناث في القلق بين الاطفال المصابين بالربو والداء الكلوي بمراحله الأخيرة حيث ثبت انتشار معدلات أعلى من القلق في الإناث عن الذكور.تناسبت اضطرابات القلق لدى الأطفال تناسبا طرديا مع زيادة العمر من دون تحسن في أعراض المرض حيث كان واضحا بشكل خاص مع الأطفال المصابين بالربو إلا أنها زادت مع غيرها من الأمراض DM و CRF وكشفت خطورة طول مدة وشدة المرض في المرضى الذين يعانون من

مضاعفات للمرض فى القلق إلى زيادة ملحوظة حيث 20% من المرضى مع الداء الكلوي بمراحله الأخيرة ، و 10% فى مرضى السكري بمضاعفات و 10% بين مرضى الربو عانوا من مستويات عالية من القلق. وكشفت النتائج الحالية لاضطرابات الإكتئاب زيادة كبيرة بين المرضى (90%) مقارنة مع الأصحاء حيث قدم 10% فقط بمعدلات طفيفة من الإكتئاب. حتى الآن لم يكن هناك اختلاف كبير في الاكتئاب بين المجموعات الثلاث (ف = 0.049 قيمة) مع زيادة كبيرة في عدد المرضى للديلزة المنتظمة حيث سجلت 80% من الاكتئاب (55% معتدل، و 15% المعتدل والحاد 10%). وأظهرت النتائج انتشار الاكتئاب ما بين الإناث عن الذكور مع وجود اختلاف واضح بينهما فى مرض الفشل الكلوى (10% اكتئاب حاد و15% متوسط فى الإناث). وسجلت النتائج زيادة مرض الإكتئاب مع زيادة عمر المريض الذى يفتقد ظهور أعراض تحسن في مرض الربو والفشل الكلى . وزيادة مطردة مع طول مدة المرض لأكثر من عام. ويشير البحث الحالى إلى أن الأطفال ذوى الأمراض المزمنة يعانون جري التحقق من زيادة كبيرة في تطوير الاكتئاب والمرض وشرع لمدة أطول أي أكثر من سنة واحدة. وتدل زيادة مماثلة بين المرضى على غسيل الكلى العادية ومرضى الربو إلى 10% مع الداء الكلوي بمراحله الأخيرة شديدة المتقدمة الاكتئاب الحاد.في الختام، هذه الدراسة تكشف عن أن الأطفال مريضة مزمنة لديها الشدة النفسية بشكل ملحوظ أكثر من الأصحاء.ومن المستحسن جدا أن المرضى الذين يعانون من مرض مزمن يجب ان يخضع لمتابعة مستمرة من قبل الأطباء النفسيين والأخصائيين الطبيين جنبا إلى جنب مع الفحص الروتيني لتطوير القلق والاكتئاب. وهذا قد يقلل من حدوث مضاعفات الربو، مارك ألماني، ونهاية مرحلة الترددات اللاسلكية. اجتماع دوري مرة أخرى مع آباء الأطفال المريضة المزمنة ينصح لتعليمهم كيفية التعامل مع المشاكل النفسية تقديم مفاتيح للكشف المبكر وإدارة اضطرابات نفسية.