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Effect of Psychotherapy on Diabetic Children and Their Parents.

Thesis

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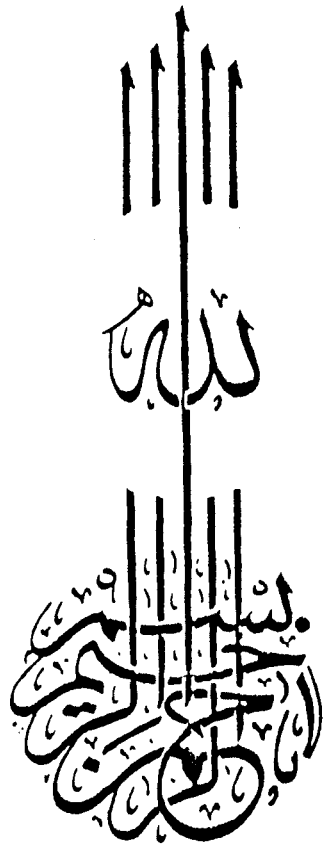

وقل رب زدني علماً

صدق الله العظيم

To My Family

Acknowledgement

Acknowledgement

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Hossam El-Esnawi

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Introduction

Type I, insulin-dependant (IDDM), or juvenile onset diabetes mellitus (JODM) presents a formidable challenge to many children, their parents, siblings, teachers and health care providers.

Children must maintain a delicate balance between daily insulin requirements, exercise and diet to survive and to prevent or delay onset of complications such as neuropathy, retinopathy, and nephropathy ***(Danouski et al., 1980).***

An important issue in the treatment of diabetes is mediation of the relationship between family functioning and the child's diabetic control. The family's psychological functioning is related to a child's diabetic control.

Family functioning affects diabetic control directly through its effect on the child's physiologic system and indirectly through its effect on the behavioral

management of the child's diabetes ***(Marteau et al., 1987).***

Cognitive dysfunction is increasingly recognized as a possible complication of insulin-dependant diabetes mellitus (IDDM). Children who develop diabetes early in life (before 4 or 5 years of age appear to have a greater likelihood of performing more poorly on measures of intelligence and other more specialized cognitive tests compared with youngsters who developed diabetes after 5 years of age ***(Christopher et al., 1992).***

Aim of the Work:

The present work aims at detection of the prevalence of psychiatric morbidity among diabetic children and their parents, to reveal if there is certain correlation between psychiatric disturbances and control of diabetes mellitus among diabetic children and also, at demonstration of the effect of supportive psychotherapy on psychiatric disorders of diabetes mellitus.

Review of The Literature

Diabetes Mellitus

Diabetes mellitus is the most common endocrine metabloic disorder of childhood and adolescence manifesting itself in its fully developed form by hyperglycemia, glycosuria, increased protein breakdown, ketosis and acidosis. If the disease is prolonged it is usually complicated by degenerative changes of blood vessels, retina, kidneys, liver and nervous system ***(Lebovitz et al., 1984).***

Different classification of diabetes have been reported ***(Cudwarth et al., 1977)***. IDDM is a severe form of diabetes mellitus and is associated with ketosis in untreated state. It is a catabloic disorder in which circulating insluin is virtually abscent, plasma glycogen is elevated, and pancreatic B-cells fail to respond to all known insulinogenic stimuli. In the abscence of insulin the 3 main target tissues of insulin (liver, muscle and fat), not only fail to take up absorbed nutrients but continue to deliver glucose, amino acids and fatty acids ibtob blood

stream from their respective storage depots. Furthermore, alteration in fat metabloism leads to the production and accumulation of ketones ***(Rosenbloom, 1981).***

Diabetes mellitus is a common disorder with an estimated prevalence between 2% and 4% of the general population. The complications of diabetes mellitus account for 25% of all new cases of end stage renal failure, 50% of all lower extremity amputation, and diabetes is the leading cause of blindness with approximately 5,000 new cases per year ***(Feinglod, 1986).***

In Egypt, the incidence of IDDM is uncertain. It was reoprted that among patients of El-Monira children's hospital during a period of four years, IDDM accounted for 19 cases out of 9762 (0.195%) ***(Gaber and Abdel Salam, 1962).***

In El Mansoura, screening of 1000 school children (5-15 years old) revealed that the prevalence rate of

IDDM among them was 2/1000 *(Ali et al., 1986)*.

Salem et al., (1990), studied the prevalence rate of IDDM among school students in heliopolis district. They reoprted a ponit prevalence rate of IDDM of 1.09/1000 with male predominance.

Etiology and pathogenesis of diabetes mellitus:-

The mechanisms responsiple for pancreatic B-cell failure are incompletely understood but may be related to:

1- Inheritance of certain genes intimately associated with HLA-system. Type I diabetes is strongly associated with an increase frequency of certain HLA antigens. These antigens are glycoprotein found on cell surfaces of all cells except blood cells and sperms. They allow the immune system to recognize homologus tissue and to detect foreign antigens. The prominent human leucocytic antigen (HLA) associated with type I diabetes are those at the B locus (B8, B15, and B18), at the D locus and the

serologically defined D-related (DR) antigens (DR3 and Dr4) ***(Rotter et al., 1980).***

2- Autoimmunity: ***MacCush (1975),*** noticed that some cases of IDDM are associated with other endocrine deficiencies such as Hashimoto thyroiditis, Adisson's disease, and pernicious anemia in which autoimmune disturbances known to be pathogenic.

Irvine et al., (1977) found that immune complexes can be isolated or detected in the circulation in patients with recent onset disease even before the start of insulin therapy.

Circulating islet cell autoantibodies have been detected in about 85% of type 1 diabetics tested in the first few weeks of diabetes. The high prevalence of these antibodies support the concept that autoimmune mechanisms may contribute significantly to progressive B-cell destruction ***(Srikanta et al., 1983).***

3- Environmental factors: Type I diabetes is believed to result from an infection or toxic environmental insult to the pancreatic B-cell in genetically predisposed persons. This leads to an exagerated and sustained immunologic process that results in multiple circulating antibodies to various component of islet cells when sufficient B-cells are destroyed, insluin secretion decreases to such levels that hyperglycemia and ketosis ensue ***(Lebovitz et al., 1984).***

Psychological Effects of Diabetes Mellitus

Insulin dependant diabetes mellitus (IDDM) may cause many medical and psychological problems in affected children and adolescents, as well as their family environment.

The problems related to IDDM differ according to the developmental level of each child ***(Bartsocas et al., 1992).***

Swift et al., (1967), in an important study using psychiatric interview and psychological testing, evaluated 50 diabetics (with an age range of 7 to 17 years and mean age of 11.7 years) and 50 individually matched controls. He described the diabetic patients as having greater dependence-independence problems, poor self perception, greater anxiety, greater oral preoccupation, more pathological sexual identifications, and poorer relationships at home and with peers.

Fisher (1984) described the most important causes of emotional disturbances in a group of diabetics as follows:

(1) Dietary restriction
(2) The need for insulin injection
(3) Urine analysis
(4) Limitations of daily activities
(5) The stigma of being a diabetic
(6) The future out look, for diabetic patient (development of complications)

The impact of IDDM on daily life is perceived differently among persons who suffer from the disease. The effects of sex, age, duration of IDDM, injection treatment; (one or two daily injections or multi-injection treatment), educational level and social status were analyzed on perceived impact of IDDM in daily life.

Logistic regression analysis showed that neither sex, educational level, injection treatment, age, duration of IDDM nor metabolic control had significant effects on perceived impact of IDDM. Social status was the only variable that had significant effect. This underscores the importance of significant other factors in dealing with IDDM *(Berit et al., 1991).*

Psychiatric features of IDDM patients:

Psychiatric assessment of diabetic patients proved that depression was the most frequent mental symptom of diabetes mellitus *(Friis and Nanjundapo, 1986).* Suicidal behavior observed among some diabetics *(Orr et al., 1986).*

Other researchers found that neurotic symptoms in general are high among diabetic patients *(Wilkinson et al., 1988). Dubnar (1948)* described the person prone to diabetes as weak, irritable, subjected to frequent mood swings, hypochondriacal and prone to changes in

behavior, ranging from over demanding dependency to explosive rebellion.

Although the research for diabetic personality had declined, many investigators contend that the overall incidence of emotional and behavioral problems in person with diabetes is higher than in normal ***(Katz, 1957 and Swift et al., 1967).***

The impact of diabetes mellitus on the central nervous system (CNS) has gained attention only recently ***(Mooradian, 1988)***. The brain is not spared by diabetes. Clinical complications are manifested in excessive stroke damage, permanent impairment in brain function from hypoglycemia and a mild chronic encephalopathy. Repeated hypoglycemia as a result of treatment may also interfere with normal protective counter-regulatory mechanisms at least partly through CNS effect.

Actually, glycemic extremes cause coma, seizures, focal neurological deficits, and impaired consciousness ***(Anthony, 1992)***.

Recurrent severe hypoglycemia is thought to cause cumulative cognitive impairment in type "1" diabetes ***(Ian et al., 1991)***.

Sachon et al., (1991) also found that severe hypoglycemias as well as chronic hyperglycemia may have a deleterious effect on cognitive performance. In particular, severe and repeated hypoglycemias could be responsible for permanent memory impairment.

Hypoglycemia produces neuroglycopenic and autonomic symptoms. Trembling, anxiety, sweating. warmness and nausea result from autonomic disturbances. On the other hand, dizziness, confusion, tiredness, difficulty in speaking, shivering, drowsiness and inability to concentrate constitute the neuroglycopenic factor ***(Hepburn et al., 1991).***

Also ***Joythi et al., (1991)***, evaluated cognitive function in children with IDDM in India. They concluded that: Specific cognitive dysfunction is observed in

children (6-12 years) with IDDM compared to healthy children. In contrast to the reports from developed countries, the deficits were noted even in children with IDDM manifesting after the age of 5 years.

As reviewed by ***Ryan (1980)***, IDDM may exhibit abnormal intelligence quotient (I.Q) and school achievement tests, particularly if school attendance problems occur.

The diabetes control and complications trial provides evidence that tight glucose control increases the risk of seizures. As with insulin over treatment, poorly controlled diabetes may clinically manifest by seizures in both ketoacidosis and in hyperosmolar coma ***(Guisado and Arieff, 1975).***

Rovet et al., (1987) found that children who develop diabetes early in life before 4 (or 5 year of age) appear to have a greater likelihood of performing more poorly on measures of intelligence and other, more

specialized cognitive tests compared with youngsters who developed diabetes after 5 years of age.

Patients with type "1" diabetes have also been noted to perform more poorly than expected on a wide range of tasks, including measure of learning, problem solving, and mental and motor speed ***(Meuter et al., 1980).***

The mechanism or mechanisms responsible for these decrements in functioning remain unknown, although recurrent episodes of severe hypoglycemia, poor metabolic control, and the presence of clinically significant retinopathy have all been suggested as possible risk factors.

To date, virtually all studies of diabetes mellitus have been plagued with methodological problems. Neuropsychological assessments have been limited in scope, sample sizes have been relatively small, diabetic subjects have tended to be volunteers drawn from clinic settings and non diabetic comparison subjects have often

been either absent or mismatched on demographic variables such as age, education, and social class. As a consequence, it has been difficult to accurately estimate the nature and extent of cognitive dysfunction ***(Christopher et al., 1992).***

Other researchers have been found that neurotic symptom in general are high among diabetic patients ***(Fawzy et al., 1986, Zeichen, 1986 and Wilkinson et al., 1988).***

Koski (1969) evaluated sixty diabetic children (30 with good control and 30 with poor control), and reported that the poorly controlled individuals had weaker personalities, that were less integrated, less imaginative, less sensitive.

Anxiety has been usually measured with interview or projective techniques ***(Appelboom et al., 1977).*** Only ***Fallstrom (1974),*** reported excessive anxiety among youngster with diabetes. ***Olatawura (1972) and Stersky***

(1963) assessed anxiety using symptom check lists. While ***Tavormina et al., (1976)*** and ***Steinhausen et al., (1977)*** employed objective personality tests to assess anxiety. These studies found no evidence that high anxiety is a characteristic of subjects with diabetes.

The Medicopsychosocial Problems of Families with Diabetic Children

The pressures on a child with diabetes and on his family in extension, become more evident during school age, when limitations, particularly of certain nutrients are common as well as difficulties, especially with regard to timetables, outings, and excursions. It is indeed strange that the majority of physicians recommend the least possible habit and relationship modifications in the families with diabetic children, while it is well known that a strict observation of daily injections, meals and exercise timetable is required, the deviation from which may lead to fatal consequences for the patient ***(Bartsocas, 1992).***

The impact of IDDM upon families with diabetic children is large and wide ranging. Working parents from IDDM families were two times more likely to be absent from work for reasons related to child care, also, health

care expenses among IDDM families were extreme ***(Songer, 1991).***

Abnormal mother child relationship was considered as a prediabetic patho-physiological condition ***(Stein and Charles, 1975).***

Previous studies have shown significant association between family functioning and metabolic control in children with IDDM ***(Auslander, 1991).***

Stein-Hausen et al., (1977) noted that poorly controlled patients described their mother as being highly supportive at disease onset and becoming less supportive over time.

A small group of children who changed from good to fair to poor control over a 5 years period was studied by ***Kumento (1977)***, A high incidence of family disruption was noted. ***Simonds (1977)*** reported unusually low rate of divorce in the families of controlled patients as

compared to those with unstable or non diabetic comparison groups.

Belmont (1973) emphasized that the most serious psychological problems of diabetics are deeply rooted in the pre-existing psychological conflicts which the diabetic condition has only served to reinforce. The same conclusion is shared by ***Trenting (1974)***. However, the cause and affect relationship is of lesser importance than establishing the interrelatedness of psychological, social and physiological process and their affects on one another in ill patient ***(Kimple, 1979)***.

On the other hand, ***Olatawura (1972)*** did not find significant psychological disturbances between diabetics and control. Also, ***Stersky (1963); Tavormina et al., (1976) and Appelboom et al., (1977)*** reported the same findings.

Some investigators have reported that children with poorer emotional adjustment have greater problems with

diabetic control ***Koski, (1969) and Swift et al., (1967).***

Simmonds (1977) for example, interviewed 80 children with diabetes, 40 in good and 40 in poor control. The interviewer was unaware of the child's diabetic status. In addition, the children's mothers filled out a check list as to their children's emotional and behavioral characteristics. The author reported minimal psychiatric disturbance in the studied children. However, poorly controled diabetic children reported more conflicts than with good control. Their mothers also described them as having significantly more behavioral or emotional problems.

In the same study, ***Simmonds (1977)*** compared these 80 children to a group of matched non diabetic peers. Children in poor control were not significantly different from their non diabetic counter parts in either psychiatric status or number of conflicts. However by mother's report, they were more anxious and depressed. Children in good control had significantly less conflicts

than the non diabetic comparison group.

Relationship with peers have been assessed using measures of isolation, alienation and social adjustment, employing interview and/or projective data. ***Fallstorm (1974), and Sayed and Leaverton (1974)*** reported evidence of isolation or maladjustment among youngsters with diabetes. Using objective tests, ***Delbridge (1975) and Tavormina et al., (1976)*** found similar results. In contrast, ***Olatawura (1972)*** did not find social relationship to be particularly problematic.

Stresky (1963) suggested that most youngsters with diabetes do not have psychological problems, but among those who do, peer relationship difficulties are quiet common.

Among all of the personality traits assessed, the evidence for peer or social relationship problem seems to be the strongest. These difficulties are characteristic of only some diabetics ***(Johnson, 1980)***.

Other investigators have pointed to particular pathological family patterns as significant variables in the disease process. The most common include (1) overanxious patterns, (2) over indulgent patterns (3) Over controlling patterns, (4) Pattern of resentment and rejection and (5) Uninterested and neglect ***(Kravitz et al., 1971).***

Despite Extensive Theorizing as to the relationship between parental or family patterns and the child's diabetic condition there have been few empirical tests of such hypothesis ***(Johnson, 1980).***

In a study by ***Bartsocas et al., (1992),*** they find the initial reaction of parents to the announcement of diabetes can be summarized as follows: Sorrow, despair, bad psychological condition, panic, anxiety, worry, fear, loss of temper and surprise due to complete ignorance of the disease. The consequence of IDDM have become a research subject in several countries. The answers were indicatively as follows: Family problems, new way of life,

restrictions on activities, hardship, fear of complications, continuous vigilance, chronic disease without prospects, medical care, keeping to a strict diet, taking care of diabetes at home, financial problems, questioning the causes, waiting for some progress of scientific research regarding the discovery of more effective medicines, ..etc. As to the anxieties felt by parents as a result of the diabetes of the child, these were primarily focused on the occurrence of hypoglycemia in their absence, forgetting the insulin injection, and not maintaining the diet.

Minuchin et al., (1978) suggested that psychological factors may influence diabetes in two ways, first, emotional disturbance may result in behavior problems (e.g refusing to take insulin and eating inappropriately) which can have metabolic consequences, or emotional disturbances may cause metabolic derangement directly through psychophysiological mechanism.

Wysocki et al., (1991) studied 81 adolescents (18 to 23 years old) with IDDM onset before age 16. Results

revealed elevated incidence of psychopathology, particularly on the dimensions of depression, hostility and attitudes toward health care. The results suggested that a history of maladjustment to IDDM in earlier adolescence predicts poor outcomes in terms of treatment adherence, frequency of contact with health professionals. Implications of the results are that these patients are at high risk for psychosocial pathology and that poor adjustment to IDDM in earlier adolescence may be predictive of persistent maladjustment.

For subjects with IDDM, the emotional, physical, and cognitive changes of adolescence are especially stressful, and contribute to deterioration of metabolic control ***(Johnson et al., 1991)***.

Kimberly et al., (1984) reviewed in a retrospective longitudinal study, the physical and psychological factors associated with labile diabetic control. Most of the children lived in families with substantial psychosocial dysfunction as chronic unresolved interpersonal conflict,

inadequate parenting, a father not living in the home, financial stress, and lack of family involvement with the diabetic illness. Many of the children had behavioral and personality problems.

In most of them, there was evidence that these dysfunctions existed prior to onset of diabetes. The psychosocial problems were not immediately apparent in many instances, thus requiring more comprehensive psychosocial assessment and involvement by a social worker or a psychologist. Emotional support and counselling were instrumental in reserving the pattern of recurrent ketoacidosis in coordination with cure by all members of the diabetes team. These findings suggest that recurrent ketoacidosis warrants prompt evaluation from a psychosocial as a physical perspective.

Malone (1984) concluded that the inability to manage diabetes plus noncompliance on the part of the patient and family are common symptoms of serious familial psychosocial dysfunction.

The psychosocial problems are often complex, not readily apparent, and usually require comprehensive involvement of a social worker or psychologist for effective resolution. Many diabetes centers, recognizing these issues, involve a social worker in the evaluation of each new child and family.

The task of the social worker is to look for clinical clues of familial psychosocial dysfunction that preceded the onset of clinical diabetes.

Because diabetic ketoacidosis is a life-threatening complication of diabetes, it seems to be important to recognize family problems early enough that appropriate intervention may improve the functional capacity of the family. This should reduce the risk of recurrent episodes of diabetic ketoacidosis in the affected family member.

In support to the above hypothesis, ***McKelvey et al., (1991)*** found that higher family support scores would be associated with better metabolic control.

Also, ***Bedell et al., (1977)*** offers some support for this hypothesis. In a group of 45 chronically ill children, those with a higher number of life stresses during the last year had more frequent episodes of sickness while attending a residential summer camp.

Many investigators are convinced that the overall incidence of emotional and behavioral problems in persons with diabetes is higher than in normal ***(Swift et al., 1967).***

Conflicting results about hostility or aggression has been studied using interview and projective tests ***(McCraw and Tuma, 1977),*** using symptoms check lists ***(Olatawra, 1972)*** and using objective personality tests ***(Tavormina et al., 1976).*** Most of these studies reported no increased aggressiveness among youngsters with diabetes. Also, ***Reihard (1991)*** found that the increased frequency of serious hypoglycemic episodes did not cause any long term neuropsychological deficits. Total self-Esteem did not differ significantly between diabetic

adolescents and non patient adolescents. There were no significant difference in age, sex and subscales of the self-esteem between the two groups ***(Kawaguchi et al., 1991)***.

Development of Children with Chronic Illness

Development of children with chronic physical illness can best be understood in the context of our expectations for the cognitive and social-emotional development of all children. The process of development depends on repeated and varied interactions between the growing child and his or her environment.

The manner and extent to which a chronic illness may modify typical developmental processes depend to a large degree on details of the illness, such as its severity, its natural history and expected prognosis. The degree of limitation associated with it, the presence or expectation of mental retardation, its genetic background and implications, necessity for physical care, and the degree to which the illness is visible and thus known to the wider community ***(Perrin and Gerrity, 1984).***

In the management of children with chronic illness the clinician faces three challenges. The first is to reach a

definite and comprehensive diagnosis. The second is to initiate promptly the array of treatments that will produce a cure or contain the progress of the disease. The third main challenge however is one that is less generally appreciated, and many details of how it can best be met remain to be resolved. This involves the proper assessment and steps needed to prevent the development of problems in the psychological and social aspects of functioning ***(Barry, 1984)***.

More considerations has been given to assessing the importance of the severity of the condition at any point in time. In the past it was generally assumed that the more severe the disorder in medical terms, the greater the likelihood that maladjustment would occur ***(Hughes, 1976).***

However, a number of studies have shown that the relationship is not as direct as it may appear ***(McAnurney et al., 1974).***

There is now reasons to believe that those with disabilities that are mild may suffer as much or more than those in whom the condition is more severe. It may be the degree of visibility of the lesion and the likelihood that this forces the child to recognize himself as a "disabled person" that influences this process. Children may face a conflict that can be resolved either by sacrificing the medical requirements or by admitting to their peers and to themselves that they do indeed have a medical condition. This ambiguous status has been referred to by social psychologists as a state of marginality ***(Steinhausen and Wefers, 1986).***

Another aspects of the clinical features of the courses that must be considered is that which relates to the pattern of symptoms presentation. In diseases that are episodic rather than persistent, it is possible that the ups and downs are more stressful than stable conditions. Thus, children facing unpredictability of a flare-up or recurrence, may be under greater stress than those who,

even with more severe disability, experience a relatively stable state over time ***(Steinhausen et al., 1984).***

Apart from the pattern of episodicity or permanence that the disorder displays, the age of onset and the actual age of the child at the time of assessment are other factors of importance. Some studies have shown that children with diseases that begin at birth adjust more readily than those whose onset is at a later, more developmentally critical or sensitive time. Certainly, those whose disease begins around school entry or during adolescence are likely to be especially vulnerable ***(Steinhausen et al., 1986).***

Of equal importance, however, is the actual age when the psychological assessment is made. As a general rule, the younger the child, the less likely that serious maladjustment will be found and the greater the opportunity for adaptive mechanisms to come into play. Conversely, the closer the child is in age to an important nodal point in his development, the greater the possibility

that psychosocial difficulties will supervene ***(Barry, 1984).***

None of the preceding factors should be considered independent of the sex of the child or other fundamental attributes such as intelligence and personality. Any attributes that may be regarded as assets diminish the likelihood of psychosocial problems, whereas clear-cut liabilities such as low intelligence or un-attractiveness serve to increase the probability of maladjustment ***(Sumpter, 1980).***

There is also a reasonable amount of evidence to support the view that the way in which the family functions and is able to adapt to the child's illness may be the most critical factors ***(Pless and Satterwhite, 1983).***

Thus in the assessment of a child with a chronic illness, it is essential that some form of assessment of the family be included ***(Barry, 1984).***

The prevalence of chronic illness in childhood and their association with mental health problems has been the subject of much research over many years ***(Rutter et al., 1981).***

Many studies suggest that a chronic illness predisposes to psychopathology, while others fail to find such a relationship ***(Drotar et al., 1981).***

Impact of Chronic Childhood Illness on Families

Living with and adjusting to a chronic physical illness can present major problems for the child and family. Although many children and their families make reasonable adjustments and lead productive lives, they all experience pain and suffering.

The developmental, psychological and social effects of a chronic illness can be profound. Comprehensive care for these children and families, therefore, should include specialized psychosocial care as well as specialized medical care. However, this may be difficult because families are often very troubled ***(Leventhal, 1984).***

Understanding the impact of chronic childhood illness on families is a difficult task. Parents have reasons for obscuring the impact, and particularly their distress, from the view of their pediatrician. Physicians are often uncertain how much understanding they ought to offer.

Careful attention to the parent-pediatrician relationship is essential to a thorough understanding of the impact of childhood illness on the family.

The impact of illness on a family can occur in many spheres: Financial, social, somatic, behavioral, conscious, and unconscious mental life- and any combination of these ***(Barbara, 1984).***

Relationship with family members:

Parents: Two major issues should be assessed to understand the child's relationship with his parents. The first is concerned with how the child feels that he is viewed by his parents. Instead of feeling accepted, loved and supported, the child who is chronically ill may feel that his parents are disappointed, in him because of his defect. This sense of disappointing will likely affect the child's self-confidence with friends and teachers and affect how the child views family events.

For, instance, a boy with diabetes who feels that he

is a tremendous burden and disappointment to his parents may feel excessive guilt.

The second area of concern is whether the child is able to communicate with the parents. To whom does the child turn for help? can the child bring up concern related to the illness? ***(Leventhal, 1984).***

Impact on Mothers:

It is assumed that mothers are most influential with their children. Since, mothers bring their children to the physician's office or clinic more frequently than do fathers, they become better known by doctors, who often write papers based on their observations. Mothers learn about their child's illness in different ways and under different circumstances ***(Barbara, 1984).***

Solinet and Stark (1971), described mothers responses to the birth of a defective child. They state that the mother must mourn the loss of her wish for perfect

infant and accept and care for the real child who was born.

Drotar et al., (1975) outlined stages mothers pass through, prior to and following the diagnosis of a serious illness, first, there is a period of shock or disbelief (this can't be so. It is a bad dream. They've got the wrong child). Then the stage of anger and resentment (it's my husband's fault for bringing us here). There are moments of self-blame (it's my fault. I married the wrong guy. My parents warned me). Later there is sadness, sometimes there is acceptance.

One can observe patterns of interaction which encompass the entire gamut from over solicitude, to complete rejection, from apparent blindness and insensitivity to the child's handicap to an exaggerated overmagnification of the defect, from demanding for and giving to the child extraordinary attention, to hiding the child to forestall the discovery of the defect; from grunting the child prerogatives of an exception to treating the child as the scum of the earth ***(Lax, 1975).***

How does one account for the variation in mothers responses to their ill children? Some psychoanalysts emphasize the mother's developmental history, her relationship with her own parents; her experience with loss, illness, or death; and her hopes for her child. Other writers focus on the mother's current situation; her relationship with her husband, her family structure, financial resources, and social support. Illness characteristics, such as the child's age at the time of the diagnosis, the severity and visibility of the disease, and its etiology and prognosis, must also affect maternal adjustment ***(Barbara, 1984).***

Impact on Fathers:

Less is known about the impact of chronic childhood illness on fathers. Fathers have been observed and interviewed about the time of diagnosis and during terminal hospitalization of their children ***(Drotar et al., 1975).***

Cummings (1976) found that fathers of mentally retarded children underwent long term personality changes resembling a neurotic constriction.

Gayton (1977) found that 32 per cent of fathers (compared with 22 per cent of mothers) obtained scores suggestive of emotional disturbance on standardized test.

What is the nature of paternal participation in the lives of families of chronically ill children? Fathers have been observed to spend long hours at work, leaving wives and ill children at home ***(Salk et al., 1972).***

Physical absence may foster emotional withdrawal and the avoidance of intense anger, disappointment, or sorrow ***(Barsch, 1988).*** It is not clear what the extent of paternal participation in care has to do and how fathers feel about or influence their children. Fathers may have special problems adjusting to the illness of a child. A lack of participation in child care, together with the fact that there is often so little that can be done medically, may

exacerbate a father's sense of helplessness.

Societal stereotypes prohibiting men from expressing feeling or demonstrating vulnerability may contribute to a father's sense of isolation ***(Barbara, 1984).***

Impact of chronic illness in siblings:

Featherstone (1980), described the thoughts and feelings of siblings of disabled children. The siblings feel embarrassed at times and then experience guilt around their embarrassment. Sometimes they fear catching the disease; other times they envy the special attention paid to an ill sibling. They may resent the real burdens, or imagined ones, which may await them when their parents grow too old to care for the patient.

Factors that may affect sibling adjustment, such as the severity or visibility of the illness, as well as the sex, birth order and age of the siblings have been considered.

The sex and birth order of siblings were found to affect adjustment *(Breslau et al., 1981)*.

In considering the child's relationship with siblings, the physician is interested in both what the child does with the siblings and how the child feels toward them. Jealousy and anger because a brother can run without difficulty or because a sister takes no medications is not an unusual feeling for a child with a chronic illness. In addition, the child may feel guilty that the illness has caused the siblings undue deprivation and suffering *(Leventhal, 1984)*

Impact on the family systems:

A number of studies have attempted to assess the impact that child disablement has on marital relationship, but the results have not produced an entirely consistent picture *(Kenneth et al., 1986). Tew et al., (1977)* found that the physical and emotional strains of caring for a disabled child cause significantly more separation or

divorce than occurs in the general population. However, other studies indicate that the likelihood of family disruption is not significantly greater in these families ***(Hewett, 1970; Freeston, 1971 and Martin, 1975).***

Family-systems theorists would argue that, So far, we have not considered the family at all, but only its constituents. Families are much more than collections of constituents, and chronic childhood illness may have its greatest impact on the ways in which family members interact with one another ***(Barbara, 1984).***

Chronic Illness impact on school and peer relations:

School aged children with chronic illnesses must contend with all the usual issues of children of this age. Some of these issues are accentuated, distorted, or made more difficult as a consequence of the altered physical and social experience that may accompany a chronic illness. Although the family remains very important to the

child throughout this period. Experiences within the school and peer group exert major influences on the development of school aged children ***(Michael, 1984).***

The successes, failures, and social relationships that children experience in school have a very strong influence on their evolving sense of self relatedness to others, and their perceptions of their ability to perform and cope effectively.

School personnel face many special difficulties and opportunities in their interactions with chronic illnesses. In situations in which children have physical disabilities or maladaptive coping strategies that interfere with learning or peer relations, school personnel may actively work to deal with these problems. School is the setting in which children learn many of the little niceties of social mores and etiquette that are necessary if they are to fit comfortably into the larger society. Children whose chronic illnesses are so severe that academic success and adaptation to the school environment are unrealistic and

highly stressful. It is important that their school experience does not become another lesson in failure and frustration *(Chess and Fernandez, 1981).*

The majority of children with chronic illness or physical disability are of normal intelligence. Despite this fact, there is evidence from a number of studies to suggest that chronically ill children under-achieve in the school than do their healthy peers *(Sultz et al., 1972).*

The nature and severity of the chronic illness or physical disability may contribute to educational difficulties, but they are not necessarily the only or even the chief elements in determining a child's academic success. Psychologic characteristics, such as intellectual abilities, motivation, perseverance, flexibility, ability to cope with stress, and interpersonal skills are all important factors in how well a child adjusts to the demands of school *(Walker and Jacobs, 1984).*

Limited alertness or stamina, side effects of medications, altered expectations, preferential and prejudicial treatment, psychosocial maladjustment, and excessive days missed owing to illness all may contribute to a chronically ill child's under-achievement in school ***(Michael, 1984).***

When a child repeatedly does poorly in school, emotional problems become unavoidable and the child tends to become discouraged. School personnel then often say that emotional problems caused the school failure, and the child and parents, who have already experienced numerous painful and confounding social experience as a consequence of the child's chronic illness, are made to feel even more aberrant, inadequate, and frustrated ***(McCollum, 1975).***

Physicians as well as parents can alley anxiety and correct misconceptions of school personnel by sharing information with them. Physicians have much of the information teachers may need, but, unfortunately they do

not routinely participate in collaborative efforts with school personnel lacking accurate information. Many teachers place inappropriate and unnecessary restrictions on chronically ill children rather than striving to normalize their experience as much as is possible ***(Gliedman and Roth, 1980).***

Although maladjustment and under-achievement are not characteristic of children with chronic illness, there is substantial evidence suggesting that psychosocial problems occur two to three times more frequently in these children than in their healthy peers ***(Gliedman and Roth, 1980).***

Frequently, children with chronic illnesses miss large amounts of school because of acute exacerbations of their condition, outpatient health care related appointments, or hospitalizations.

In reality, there are no easy solutions to many of the absence-related effects on school achievement. Children

with chronic illness and their families often rely on medical treatment and schooling as symbols of hope, and the breakdown of their commitment to these routines often has implications for all ares of the child and family's life ***(McCollum, 1975).***

School-aged children spend a substantial proportion of their time with other children of the same age in school, in the neighborhood, and in organized activities. For children of this age, the peer group exerts a very strong influence. As the child progresses in his attempts to achieve independence from his parents, the acceptance and feedback of peers becomes vitally important ***(Michael, 1984).***

Some chronically ill children are made fun of by healthy peers, are frustrated by their learning difficulties, and feel inferior to and isolated from their normal-bodied classmates ***(Glottieb, 1978)***.

One of the most st[illegible]ng characteristics of middle childhood is the child's [illegible]d to be the same as other children, to be accepted [illegible] peers, and to develop a sense of membership with the peer group. School aged children identify with their peers as well as their parents, and the feedback that they receive from other children has a powerful influence on their developing self image and expectations. It is at this point, in finding their place among their peers, that children begin to assume their place in society and develop a commitment to its standards and ethics ***(Lidz, 1968).***

Subjects and Methods

Subjects and Methods

Selection of the Sample:

85 children (43 females and 42 males) suffering from type 1 diabetes mellitus (insulin dependant) (IDDM) were chosen from the diabetes clinic at the Ain-Shams University, children's hospital. Their ages ranged from 7 to 15 years.

Also, 45 parents, of some studied diabetic children, with regular visits to the clinic were included in the study. Also, 30 non diabetic children matched in the criteria of sex, age group, and social class were choosen and submitted for a comparative study as a control group.

Procedures:

(I) The diabetic children sample group were subjected to:

* Full history and thorough medical examination for each child stressing on the following points (sex-age-social

class-onset of diabetes either before or after 5 years of age, degree of control of the disease as shown by last year history of hyperglycemic attacks, hypoglycaemic attacks and/or admission to the hospital.

* Also history of any psychological, social, or emotional troubles that required psychiatric or social interference.

* Determination of the social class of the whole family using vital resources wich included income, occupation, level of education, residence and the level of social culture and identity.

According to Murphy (1987); social class was graded as:

- Class I (highest): as physicians, lawyers, professors and executive of large corporation.
- Class II (high): as social workers and administrators.
- Class III (middle): as medical assistants, small business, sales, skilled workers.
- Class IV (low): machine operators, semiskilled workers.

- Class V (lowest): unskilled workers, unemployed persons.

* Determination of the intelligence quotient (degree of intelligence) for the diabetic children using Wechsler intelligence scale for children.

Grading will be determined from scores as follows:

Grade I:	>140	(genius)
Grade II:	110-130	(highly intelligent)
Grade III:	90-110	(intelligent)
Grade IV:	70-90	(average)
Grade V:	<70	(mental subnormality)

(Bingham, 1946)

* Determination of the psychiatric morbidity by using the general health questionnaire (G.H.Q) in its arabic form-28 items with its simple scorer method which is (0-0-1-1) respectively for the four answers of each item.

The G.H.Q. is one of the most widely used self-

administered psychological tests, aiming at detecting current psychiatric disturbance which may be then clarified by a standardized interview. The cut score is equal or above (7), from 7 to 13 considered moderate G.H.Q. score and above 13 considered severe G.H.Q. score ***(Goldberg, 1972)***.

* Determination of the incidence of anxiety among diabetic children sample using anxiety scale. This scale was designed by ***Abd-Elhamid and El-Nial (1991).*** It is an arabic version derived from anxiety scale desigend by ***Castaneda and Palermo (1956).***

This scale consist of 36 statements and measures all the aspects of anxiety which include the following:

1- Somatic features
2- Physiological features
3- Motor features.
4- Emotional features.
5- Mental features.
6- Social features.

Each category assessed by 6 statements the total degree ranged between 0-36, the cut score is 18.

* Determination of the incidence of depression using the depression scale designed by ***Abd-Elzaher (1983)***; which is an arabic version of a scale designed by ***Kovacs and Beck (1977)***. This scale consist of 27 questions, every question have 3 answers scores give 0,1,2. The score ranges between 0-54. The cut-off ponit of the scale is 16.

(II) The parents of the diabetic children were subjectd to the following:

* Screening of the psychiatric morbidity using the G.H.Q.
* Screening of anxiety and depression incidence using both anxiety and depression scales.

(III) The control group were subjected to determination of any probable psychiatric morbidity using the G.H.Q. And also, determination of the intelligence quotient, using Wechsler intelligence scale for children.

(IV) The diabetic children and the parents with either moderate or severe G.H.Q. score, were subjected to psychiatric management through supportive short term psychotherapeutic sessions, by professional therapists in the institute of psychiatry, Ain-Shams University. The therapists are M.D. qualified in psychological medicine.

The schedule of these therapeutic handling was in the form of weekly sessions as individual psychotherapy aiming for ventelating, claryfing and quiding the patient (cases or parents). The short term therapy was conducted in six months period.

* Adjuvant pharmacotherapy was served for some cases. These pharmacotherapy was in the form of tricyclic antidepressant or minor tranqulizer in average therapeutic dose.

* The quidance approach was designed to be in the form of behavioural tasks as well as modified behavioural therapeutic approaches like those used with cases who

have nocturnal enuresis or those with school phobias.

* Regular evaluation for these weekly sessions were recorded by the therapist however global reassesment both clinically and through the G.H.Q., anxiety scale and depression scale were done after six months for all those who continued these short term therapy from both the diabetic children and the parents.

Statistical Analysis

The data collected were introduced to personal computer. Statistical analysis of the whole work was done using the S.P.S.S. (statistical package for social science) at the department of community medicine, Ain Shams University.

The following statistical parameters have been used in this feild research:

1- The Mean = The arithmetic average

$$\text{The mean} = M = \frac{\Sigma x}{N}$$

where Σ = The sum of the individual values

x = individual values

N = The number of cases

2- Standard deviation (SD):

It is the square root of the variance. It gives an estimate of the average deviation aroud the mean.

$$S.D. = \sqrt{\frac{\Sigma x^2 - \frac{(\Sigma x)^2}{n}}{n-1}}$$

where : Σx^2 = The sum of squares of the individual values.

$(\Sigma x)^2$ = The square of the sum of the individual values.

3- Chi-square: X^2 :

Used to test the significance of the quantitative data under investigations according to the formula:

$$X^2 = \Sigma \frac{(O-E)^2}{E}$$

Where O= The observed value

E= The expected vlaue

4- P paired "T" test:

Used for comparison of mean values according to

the following formula:

$$T = \frac{Xd}{SE}$$

Where Xd = The mean difference.

SE = The standard error of this mean difference.

5- Logestic regression analysis:

Logisteic regression analysis was performed using the S.P.S.S. programme to determine importance of different variablkes affecting general health questionnaire.

Age and intelligence quotient was introduced into the procedure as continuous variables. Sex and social class were introduced as categorical variables. Control of diabetes, hypoglycemic attacks, hyperglycemic attacks were introduced as (1/0) data, for presence or absence of the conditions. Stepwise method for selection of significant variables was used.

We used multiple regression analysis using stepwise techniques to determine factors affecting degree of improvement in general health questionnaire, anxiety, and depression after psychotherapy.

Results and Observations

Results and Observations

This study included 85 diabetic children, 39 males (45.9%) and 46 females (54.1%), all with IDDM. Their age ranged from (7-15) years, with mean 10.39 ± 2.34 years.

Also, included 30 children as a control group, 14 male (46.7%) and 16 female (53.3%), all are non diabetic children. Their age ranged from (7-15 years), with mean 9.766 ± 2.26 years.

Also, included 45 parents of a diabetic children, their children were included in the same study. The majority are mothers, 31 (68.9%), the rest are fathers, 14 (31.1%).

Serial number	Age	Sex	General health questionnaire		Intelligence quotient	
			Score	*Evaluation*	*Score*	*Class*
1	7	male	2	normal	111	II
2	10	male	6	normal	97	III
3	10	female	1	normal	102	II
4	12	male	5	normal	85	IV
5	14	female	14	severe	77	IV
6	15	female	1	normal	103	III
7	14	female	5	normal	95	III
8	8	female	6	normal	90	III
9	8	female	4	normal	87	IV
10	11	male	3	normal	99	III
11	9	female	1	normal	110	II
12	8	male	6	normal	95	III
13	8	male	8	moderate	115	II
14	10	female	5	normal	91	III
15	7	male	2	normal	79	IV
16	9	female	1	normal	113	II
17	10	male	1	normal	93	III
18	8	male	1	normal	107	III
19	8	male	2	normal	111	II
20	8	female	8	moderate	99	III
21	11	female	10	moderate	79	IV
22	7	female	4	normal	100	III
23	13	female	6	normal	92	III
24	12	female	9	moderate	77	IV
25	10	male	1	normal	120	II

Table (1) to be continued

Serial number	Age	Sex	General health questionnaire		Intelligence quotient	
			Score	*Evaluation*	*Score*	*Class*
26	9	male	1	normal	99	III
27	8	female	3	normal	111	II
28	7	female	6	normal	109	III
29	12	male	3	normal	121	II
30	10	male	1	normal	116	I

Table (1) shows the obtained data of the control group indicating the age, sex, general health questionnaire test score and evaluation, and intelligence quotient score and class distribution

No.	Age	Sex	social class	Onset of diabetes		Control of diabetes		Last year history of		
				Before 5 years old	After 5 years old	Good	poor	Hypoglycemic attack	Hyperglycemic attacks	Admission to the hospital
1	10	F	I		*		*	*	*	*
2	11	F	III		*		*		*	*
3	12	F	V	*			*	*	*	*
4	12	F	V	*		*				
5	14	F	V	*			*	*	*	*
6	11	M	V		*	*				
7	9	F	V	*		*				
8	12	F	V	*			*	*	*	*
9	11	M	II		*	*				
10	14	F	IV		*	*				
11	7	M	V	*		*				
12	8	M	III	*			*	*		*
13	8	M	II	*		*				
14	11	M	I	*			*		*	*
15	8	F	V	*			*	*	*	*
16	9	M	V	*		*			*	
171	10	F	IV	*		*				
8	15	F	IV	*		*				
19	13	M	V		*	*				

Table (2) to be continued

No	Age	Sex	social class	Onset of diabetes		Control of diabetes		Last year history of		
				Before 5 years old	After 5 years old	Good	poor	Hypog glycemic attack	Hyperg glycemic attacks	Admission to the hospital
20	7	F	V	*			*	*	*	*
21	10	M	III		*	*				
22	9	M	IV	*			*	*	*	*
23	11	M	IV	*			*	*	*	*
24	8	M	III	*		*				
25	12	M	II		*	*				
26	7	F	V	*		*			*	*
27	7	M	V	*		*			*	
28	11	F	III		*	*				
29	9	F	IV		*	*			*	
30	8	M	V	*				*		
31	12	F	III	*		*			*	*
32	13	M	V		*	*	*			
33	10	F	I					*		
34	10	F	IV		*			*	*	*
35	14	M	V		*	*	*		*	*
36	15	F	V		*	*	*			
37	15	M	IV		*	*				
38	10	F	II		*	*			*	
39	9	F	IV		*			*		
40	7	F	IV	*		*			*	*
41	8	M	V	*			*	*		
42	9	M	II	*		*				*
43	8	F	IV	*			*	*		

Table (2) to be continued

No.	Age	Sex	social class	Onset of diabetes		Control of diabetes		Last year history of		
				Before 5 years old	After 5 years old	Good	poor	Hypog glycemic attack	Hyperg glycemic attacks	Admission to the hospital
44	7	F	IV	*			*	*		*
45	10	F	V		*		*	*		*
46	14	F	V		*	*				
47	10	M	IV	*		*				
48	11	M	I		*	*				
49	12	M	V	*			*	*	*	*
50	11		III		*	*				
51	13	F	II		*	*				
52	10	F	V	*		*				
53	15	F	V		*	*			*	
54	13	F	V	*			*	*	*	*
55	12	F	V		*		*			*
56	12	M	IV		*	*				
57	7	M	V	*		*				
58	10	M	V	*		*			*	
59	8	F	IV	*			*			*
60	9	F	II	*		*				
61	11	F	III		*	*			*	*
62	11	M	IV	*			*	*		
63	9	F	IV		*		*	*	*	*

Table (2) to be continued

No.	Age	Sex	social class	Onset of diabetes		Control of diabetes		Last year history of		
				Before 5 years old	After 5 years old	Good	poor	Hypog glycemic attack	Hyperg glycemic attacks	Admission to the hospital
64	8	M	V		*		*		*	
65	7	F	V	*		*				
66	10	F	IV	*			*	*		*
67	10	M	IV	*			*	*		*
68	7	F	V		*	*				
69	12	M	IV	*			*	*	*	*
70	11	F	III	*		*				
71	14	F	V		*	*				
72	12	F	III	*		*				
73	15	M	IV		*		*	*		*
74	8	M	II	*		*				
75	14	F	V	*			*		*	*
76	9	M	II	*			*	*		*
77	11	M	IV	*			*		*	*
78	10	F	IV		*		*	*		
79	12	F	IV	*		*				

Table (2) to be continued

No.	Age	Sex	social class	Onset of diabetes		Control of diabetes		Last year history of		
				Before 5 years old	After 5 years old	Good	poor	Hypog glycemic attack	Hyperg glycemic attacks	Admission to the hospital
80	9	F	V	*		*				
81	13	F	III			*				
82	10	F	IV		*	*				
83	7	M	II	*	*		*	*	*	*
84	8	M	V				*	*	*	*
85	8	F	III	*	*	*				

Table (2): shows the diabetic children group obtained data (age, sex, social class grades, onset of diabetes either before 5 years old or after 5 years old, degree of control of children either good control or poor control, and last year history of hypoglycamic attacks, hyperglycamic attacks and hospital admission.

(N.B: F= female and M= male)

Pt No	Subthreshold G.H.Q. (n=52)				Pt No	Moderate G.H.Q (n=19)				Pt No	Severe G.H.Q. (n=14)			
	I.Q Score	Anx. Score	Depr Score	GHQ Score		I.Q Sc.	Anx Sc.	Depr Sc.	GHQ Sc.		I.Q Sc.	Anx Sc.	Depr Sc.	GHQ Sc.
1	120	5	3	4	4	112	18	8	10	2	80	9	17	15
6	105	8	9	1	8	70	19	11	11	3	76	19	14	18
7	115	11	6	3	14	111	11	18	11	5	88	12	19	19
9	110	6	5	1	17	95	18	19	9	13	81	20	19	14
10	96	11	8	4	22	82	20	11	12	41	99	20	19	16
11	103	9	4	2	23	95	17	13	10	48	115	20	19	16
13	122	6	8	5	31	75	19	11	13	63	85	19	20	14
15	78	5	9	2	32	112	20	19	13	64	76	11	19	14
16	80	7	8	3	33	105	16	20	13	66	77	21	19	20
18	109	5	9	2	36	75	12	19	13	71	95	19	18	14
19	105	12	14	6	42	95	15	13	11	72	99	18	11	14
20	71	11	10	1	44	76	19	12	9	73	110	19	9	14
21	101	5	9	1	45	92	21	19	12	75	75	21	19	15
24	87	10	8	3	46	83	15	9	11	77	91	20	19	15
25	110	8	10	2	54	77	20	11	12					
26	72	7	11	3	64	81	21	9	12					
27	89	3	4	1	67	81	18	11	12					
28	95	5	7	4	78	87	20	12	12					
29	101	6	8	6	85	91	22	16	10					
30	89	5	6	5										
34	77	9	8	1										
35	100	9	11	1										
37	100	6	11	3										
38	95	11	15	4										
39	125	8	9	2										
40	73	7	6	3										
43	109	11	9	5										
47	90	6	5	2										

Tbale (3) to be continued

Pt No	Subthreshold G.H.Q. (n=52)				Pt No	Moderate G.H.Q. (n=19)				Pt No	Severe G.H.Q. (n=14)			
	I.Q Score	Anx. Score	Depr Score	GHQ Score		I.Q Sc.	Anx Sc.	Depr Sc.	GHQ Sc.		I.Q Sc.	Anx Sc.	Depr Sc.	GHQ Sc.
50	120	9	10	2										
51	86	12	13	1										
52	99	9	5	4										
53	87	11	9	2										
55	92	11	14	5										
56	102	9	6	1										
57	105	10	7	1										
58	93	11	8	3										
59	76	9	11	5										
60	96	10	12	4										
62	100	10	12	6										
65	92	10	12	3										
68	85	9	8	4										
69	88	11	9	3										
70	92	9	5	3										
74	101	12	10	4										
76	83	9	8	3										
79	99	10	7	4										
80	100	7	5	1										
81	105	9	6	4										
82	95	8	2	6										
83	79	5	6	2										
84	85	3	7	4										
X ± S.D	95.44 ± 13.26	8.46 ± 2.9	8.23 ± 2.77	3.28 ± 1.94		89 ± 13	16.89 ± 3.46	13.6 ± 3.98	10.8 ± 2.51		89 ± 13	17.1 ± 3.9	17.21 ± 3.40	14.57 ± 1.45

Table (3): Intelligence quotient, anxiety, depression and general health questionnaire scores of the three groups of diabetic children according to general health uestionnaire evaluation (subthreshold, moderate and severe).

	Control group (n=30)	Diabetic children group (n=85)	Chi square	P value	Significance
Age mean ± S.D.	9.77 ±2.27	10.39 ±2.34	1.26	>0.05	non significant
Sex: Male% Female %	53.3% 46.7%	54.1% 45.9%	.006	>0.05	non significant
G.H.Q. score mean± S.D.	4.1 ±2.21	7.97 ±1.83	3.85	<0.05	significant
Intelligence quotient, class distribution Class I Class II Class III Class IV Class V	- 33.3% 46.7% 20.0% -	- 16.5% 41.2% 42.4%	6.212	<0.05	significant

Table (4): Comparison between control group and diabetic children group

There is no sex difference or age difference between the control group and the diabetic children group, this means age and sex matching of the control group and the diabetic children group. But, there is significant difference between the control and diabetic children groups in the general health questionnaire score and in the intelligence quotient class distribution.

Social class ⇨ Percentage % ⇩	I n= 4	II n= 10	III n= 11	IV n= 34	V n=26	Chi Square	P value	Sig.
G.H.Q - Subthreshold - Moderate - Severe	 25 % 50 % 25%	 90% 10% -	 63.6% 9.1% 27.3%	 58.8% 26.5% 14.7%	 57.7% 23.1% 19.2%	5.94	>0.05	non sig.
With no anxiety with anxiety	75 % 25 %	100% -	72.7% 27.3 %	70.6% 29.4%	65.4% 34.6%	4.56	>0.05	non sig.
with no depression With depression	25 % 75 %	100% -	81.2% 18.2%	79.4% 20.6%	80.8% 19.2 %	10.10	<0.05	Sig.
Intelligence quotient Class I Class II Class III Class IV Class V	 - 100% - - -	 - 40% 30 % 30% -	 - 18.2 % 54.5% 27.3% -	 - 3.2% 25.8% 61% -	 - 3.9% 28.1% 68%	12.11	<0.05	Sig.

Table (5) Comparison between diabetic children in different social classes as regards general health questionnaire (G.H.Q.) evaluation (suubthreshold, moderate and severe), Anxiety, depression, and different classes of intelligence quotient.

There is no significant difference between different social classes regarding general health questionnaire evaluation whatever subthreshold, moderate, and severe.

Also, there is no significant difference between different social classes and percentage of anxiety.

But, there is significant difference with percentage of depression among diabetic children (more cases of depression with higher social classes).

Also, there is significant difference with cases of diabetic children with degree of intelligence quotient in relation to different social classes (the higher the social class, the higher the intelligence quotient).

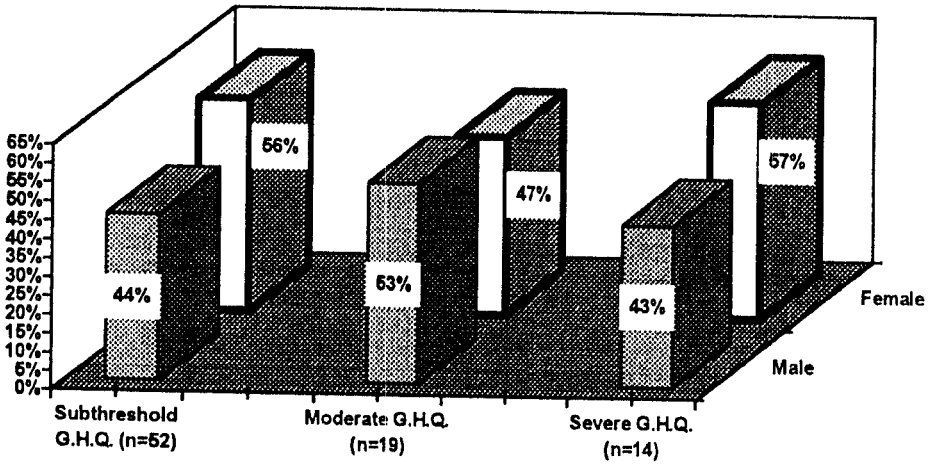

Fig (1) A: Percentage of diabetic children with (subthreshold, moderate and severe) general health questionnaire according to sex.

There is no significant difference between males and females in the percentage of distribution of cases with either subthreshold, moderate, or severe general health questionnaire evaluation (chi-square=0.457) and ($p>0.05$).

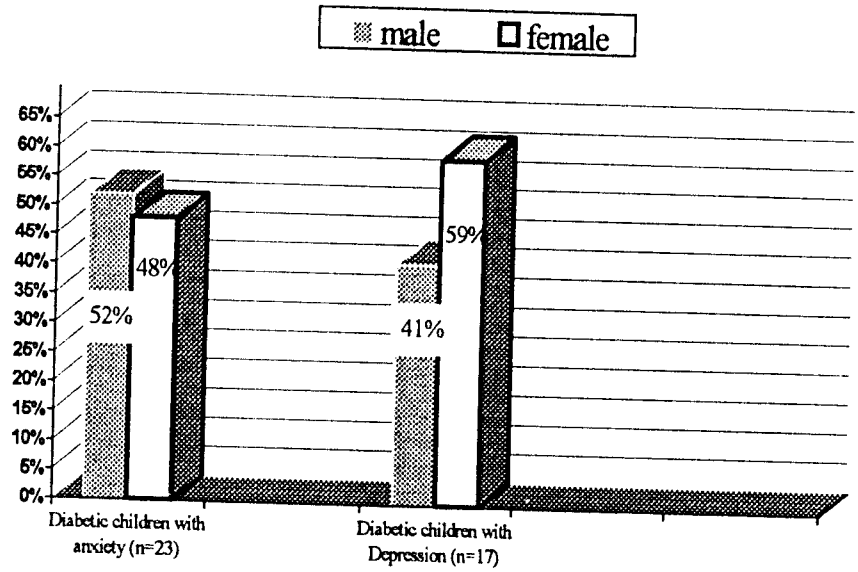

Fig (1) B: Percentage of diabetic children with anxiety and depression according to sex.

There is no significant difference between males and females diabetic children as regarding anxiety (chi-square=0.502) and ($p>0.05$).

Also, there is no significant difference in the percentage of depression between males and females diabetic children (chi-square=0.189) and ($p<0.05$).

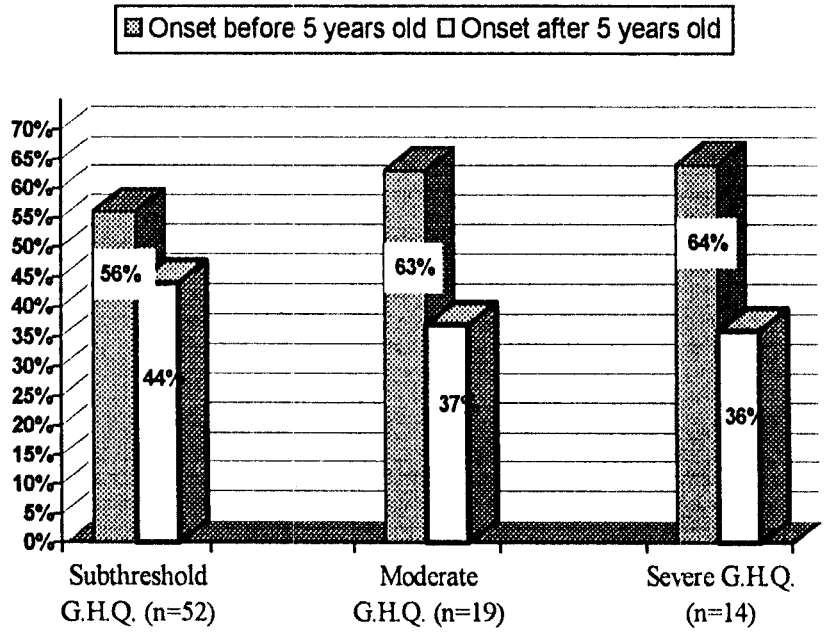

Fig (2) A: Percentage of diabetic children with general health questionnaire evaluation either subthreshold, moderate, and severe according to the onset of diabetes either before or after 5 years old.

There is no significant difference between diabetic children with onset either before or after 5 years old in relation to different evaluation of general health questionnaire (subthreshold, moderate and severe). Chi-square= 0.520 and P>0.05.

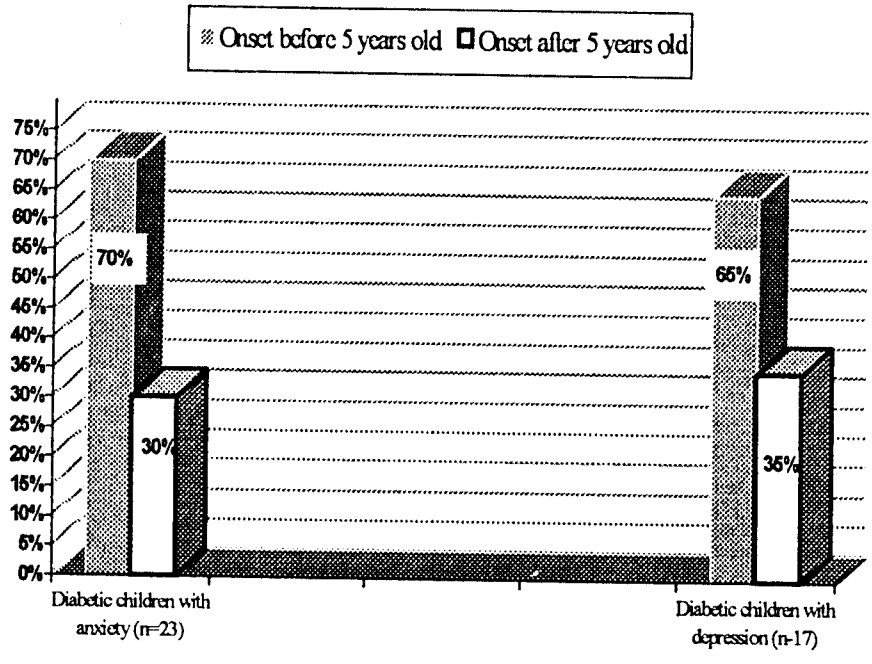

Fig (2) B: Percentage of diabetic children with anxiety and depression according to the onset of diabetes either before or after 5 years old.

There is no significant difference between diabetic children with onset of diabetes before or after 5 years old in relation to percentage of cases with anxiety. Chi-square = 1.502 and $p>0.05$.

Also, there is no signifiant difference in relation to percentage of cases with depression. Chi-square=0.303 and p>0.05.

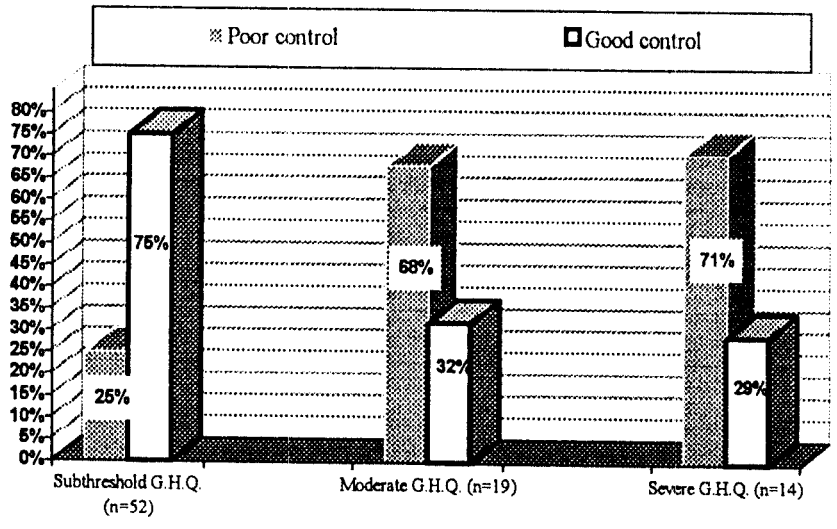

Fig (3) A: Percentage of diabetic children with general health questionnaire evaluation either subthreshold, moderate, and severe on both controlled and poor controlled diabetes.

There is a high significant difference between diabteic children in good and poor control of diabetes as regards general health questionnaire evaluation (subthreshold, moderate, and severe), chi-square = 16.549 and p<0.001.

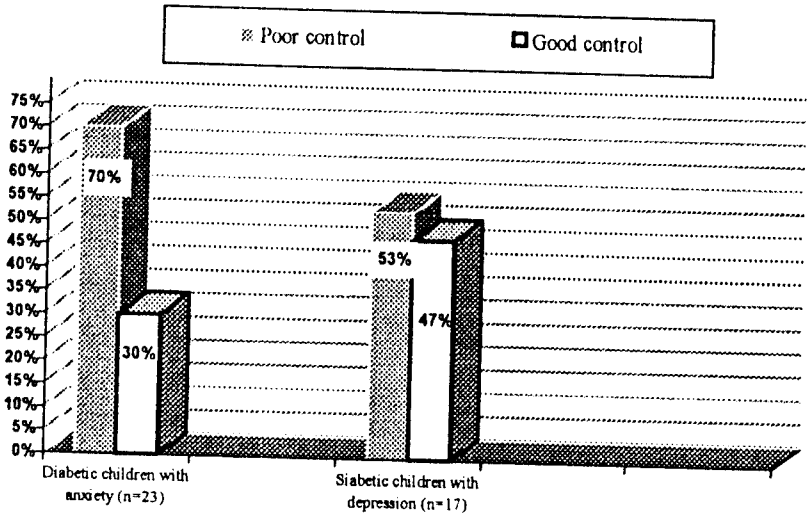

Fig (3) B: Percentage of diabetic children with anxiety and depression on both controled and poor controled diabetes.

There is a highly significant difference between diabetic chidren with good or poor control of diabetes, and percentage of anxiety. Chi-square = 9.56 and $p<0.001$. But, there is no significant difference between the percentage of depression and diabetic children with good or poor control of diabetes. Chi-square=0.97 and $p>0.05$.

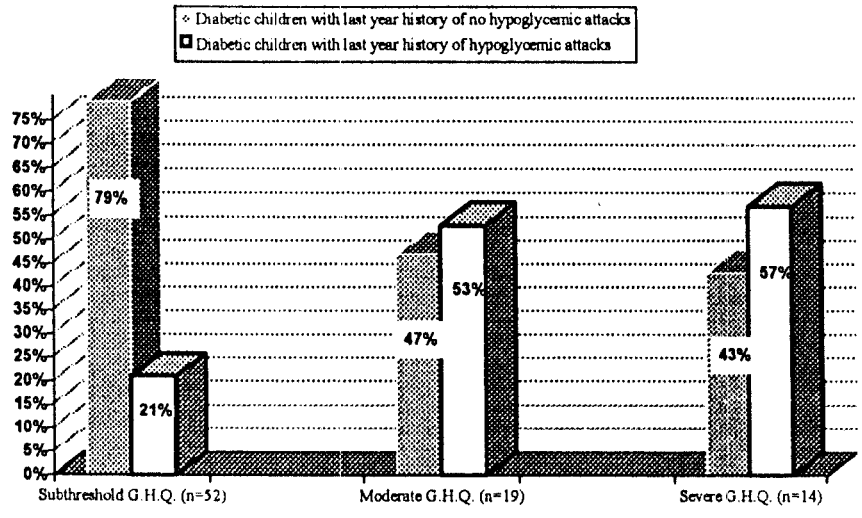

Fig (4) A: Percentage of diabetic children with subthreshold, moderate, and severe general health questionnaire evaluation as regards last year history of hypoglycemic attacks.

There is moderate significant difference between the degree of general health questionnaire evaluation and last year history of hypoglycemic attacks. Chi-square=10.08, $p<0.01$.

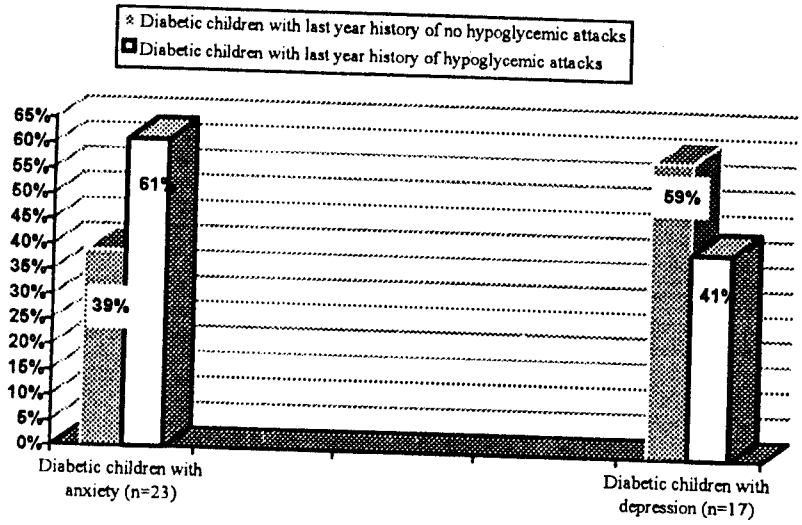

Fig (4) B: Percentage of diabetic children with anxiety and depression as regareds last year history of hypoglycemic attacks.

There is correlation between the occurance of anxiety and last year history of hypoglycemic attacks. Chi-square =10.03 and $p<0.01$. But, there is no association between the occurance of depression and the last year history of hypoglycemic attacks. Chi-square=0.012, $p>0.05$.

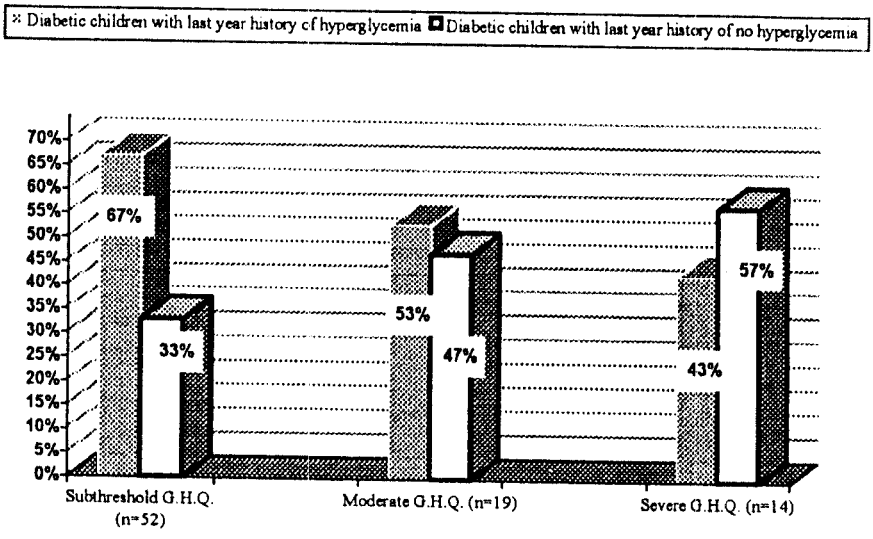

Fig (5) A: Correlation between history of last year hyperglycemic attacks and general health questionnaire scoring in diabetic children.

There is no significant correlation between the degree of general health questionnaire evaluation and last year history of hyperglycemic attacks. Chi-square=3.301, $p>0.05$.

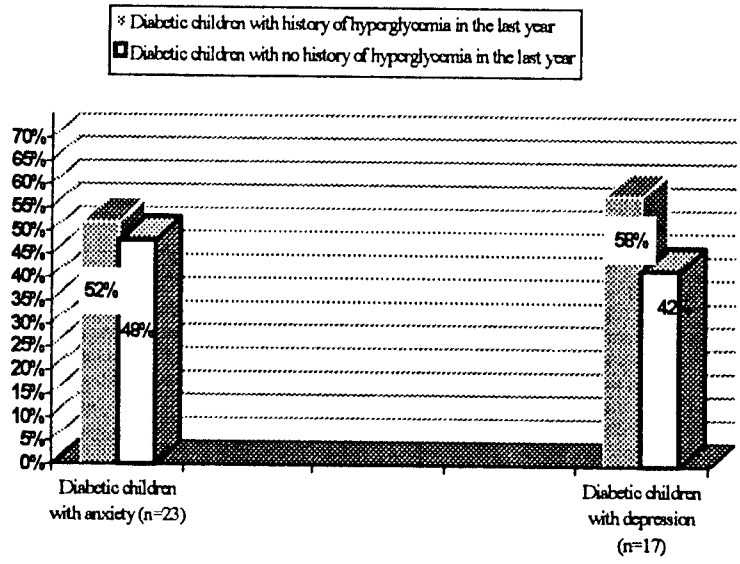

Fig (5) B: Correlation between history of last year hyperglycemic attcks and percentage of anxiety and depression in diabetic children.

There is no correlation between the percentage of anxiety and last year history of hyperglycemic attacks. Chi-square =0.804, $p>0.05$. Also, there is no correlation between the percentage of depression and last year history of hyperglycemic attacks. Chi-square=0.012, $p>0.05$.

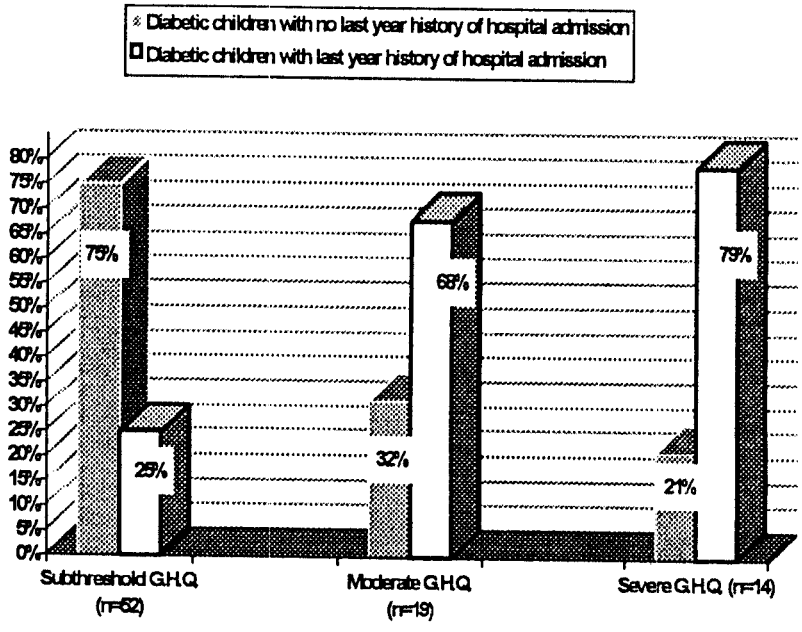

Fig (6) A: Correlation of hospital admission in the last year and general health questionnaire scoring of the diabetic children.

There is a high significant difference between the degree of general health questionnaire evaluation and last year history of hospitalization. Chi-square =19.045, $p<0.001$.

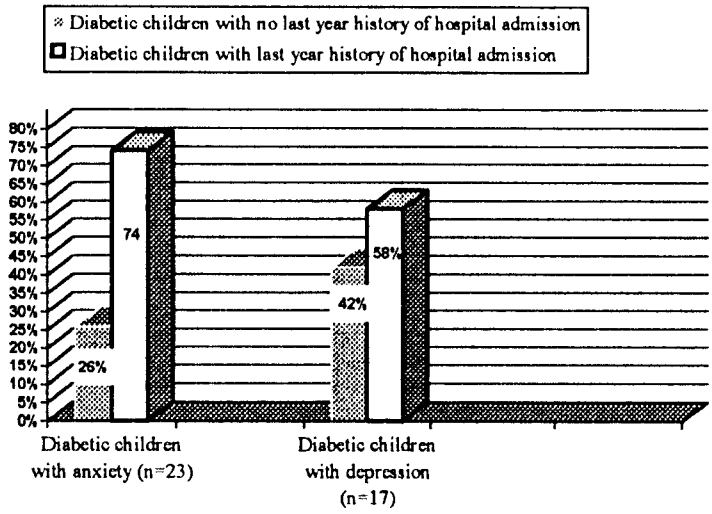

Fig (6) B: correlation of hospital admission in the last year and anxiety and depression percentage of the diabetic children.

There is a high significant difference between the percantage of anxiety and last year history of hospitalization. Chi-square =11.842 and $p<0.001$.

But, there is no significant difference between the percentage of depression and last year history of hospitalization in diabetic children. Chi-square=2.02, $p>0.05$.

Intelligence Quotient Sclae	General Health Questionnaire (G.H.Q.)			Anxiety Evaluation		Depression Evaluation	
	Subthreshold (n=52)	moderate (n=19)	severe (n=14)	with anxiety (n=23)	without anxiety (n=62)	with depression (n=17)	without depression (n=68)
I	-	-	-	-	-	-	-
II	15.4%	21.1%	14.3%	16.1%	17.4%	14.7%	23.5%
III	50%	26.3%	28.6%	46.8%	26.1%	42.6%	35.3%
IV	34.6%	52.6%	57.1%	37.1%	56.5%	42.6%	41.2%
V	-	-	-	-	-	-	-
Chi-square P value Sign. value	=4.79 p>0.05 non significant			=3.25 p>0.05 non significant		=0.82 p>0.05 non significant	

Table (6): Percentage and significance of distribution of diabetic patients in different intelligence quotient classes in relation to percentages of general health questionnaire, anxiety, and depression evaluations.

By using logestic regression technique, aberrant general health questionnaire in the diabetic children group was found significantly correlated with:

-Control of diabetes: R=0.160 p<0.001

-Age: R=0.351 p<0.05

-Last year history of hypoglycemic attacks
R=0.265 p<0.05

-Intelligence quotient:
R=0.494 p<0.05

However in multiple logestic regression, we found that the most significant factors affecting general health questionnaire evaluation were control of diabetes mellitus and age of the child. This means that more abnormal general health questionnaire (higher score) was found among uncontroled diabetic children and among older children.

Poor control diabetic children were more liable to develop abnormal general health questionnaire by a factor of 950% (ods ratio range=3.0-29.0).

Risk for developing general health questionnaire abnormalities increased with age after adjusting for

control of diabets by 37% for each year between (7-15) years. (ods ratio range=1.07-1.75).

Presence of anxiety among diabetic children was related to:

- Last year history of hypoglycemic attacks:
  R=0.286 $p<0.001$

- Control of diabetes R=0.271 $p<0.001$

- Intelligence quotient R=0.106 $p<0.05$

In logestic regression model using stepwise technique, hypoglycemic attacks were the only variable selected to predict anxiety aberrations with a relative risk estimae of 487% (ods ratio range=1.7-13.7). The other factors were not significant after adjusting for hypoglycemia.

* Depression evaluation in diabetic children group was not significantly related to any of the factores studied (age, sex, social class, onset of diabetes, control of diabetes and last year history of hypoglycemic attacks, hyperglycemic attacks and hospital admission).

Pt No	Evaluation before psychotherapy			Evaluation after psychotherapy		
	Anxiety score	Depression score	G.H.Q Score	Anxiety Score	Depression score	G.H.Q. Score
4	18	8	10	9	12	6
8	19	11	11	11	5	4
14	11	18	11	12	6	4
17	18	19	9	13	12	5
22	20	11	12	14	10	5
23	17	13	10	19	18	15
31	19	11	13	12	19	7
32	20	19	13	9	6	6
33	16	20	13	8	12	5
36	12	19	13	9	12	9
42	15	13	11	20	18	16
44	19	12	9	12	10	4
45	21	19	12	16	15	5
46	15	9	11	12	8	5
54	20	11	12	15	9	6
64	21	9	12	19	8	5
67	18	11	12	12	9	5
78	20	12	12	14	10	5
85	22	15	10	16	7	7
2	9	17	15	9	12	6
3	19	14	18	12	12	7
5	12	19	19	11	14	10
12	20	19	14	14	10	7

Table (7) to be continued

Patient No	Evaluation before psychotherapy			Evaluation after psychotherapy		
	Anxiety score	Depression score	G.H.Q Score	Anxiety Score	Depression score	G.H.Q. Score
41	20	19	16	16	14	8
48	20	19	16	12	6	7
63	19	20	14	12	11	8
64	11	19	14	10	12	6
66	21	19	20	19	12	10
71	19	18	14	9	12	5
72	17	11	14	17	15	5
73	19	9	14	12	9	4
75	21	19	15	17	8	5
77	20	19	15	16	12	8
Mean± S.D.	17.71± 3.34	15.189± 2.970	12.812± 2.970	13.406± 3.201	11.187± 3.560	6.718± 2.854

Table (7): Anxiety, depression, and G.H.Q. scores in diabetic children with moderate G.H.Q. score (first 19 values) and with severe G.H.Q. score (the following 14 values) before and afrter Psychotherapy

There is a high significant difference between the G.H.Q. score before and after psychotherapy. Chi-square=10.43 and $p<0.001$. Also, there is a high significant difference between anxiety score before and after psychotherapy, where chi-square =7.17 and $p<0.001$. Also, there is a high significant difference between depression score before and after psychotherapy. Where is chi-square=5.51 and $p<0.001$.

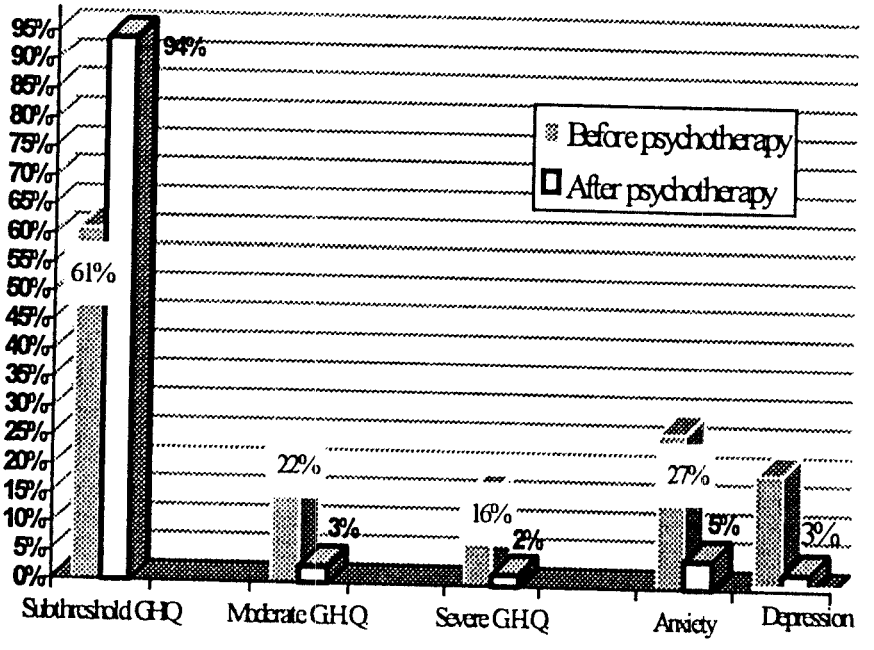

Fig (7): Percentage of diabetic children with subthreshold, moderate and severe general health questionnaire (G.H.Q.), anxiety and depression before and after psychotherapy.

There is a high significant difference in the percentage of G.H.Q. after psychotherapy. Chi-square=62.245 and $p<0.001$.

Also, there is a high significant difference in the percantage of anxiety in the diabetic children after psychotherapy. Chi-square=14.159 and $p<0.001$.

Also, there is a high significance difference in the percentage of depression in the diabetic children after psychotherapy. Chi-square=12.540 and $p<0.001$.

No	Sex	Before Psychotherapy Evaluation						After Psychotherapy Re-evaluation					
		G.H.Q.		Anxiety		Depression		G.H.Q.		Anxiety		Depression	
		Score	Eval	Score	Eval	Score	Eval	Score	Eval	Score	Eval	Score	Eval
1	M	18	S	18	+ve	16	+ve	11	M	15	-ve	15	-ve
2	F	6	N	13	-ve	12	-ve						
3	F	4	N	13	-ve	4	-ve						
4	F	5	N	11	-ve	11	-ve						
5	F	19	S	19	+ve	16	+ve	9	M	17	-ve	13	-ve
6	M	1	N	-	-ve	-	-ve						
7	F	9	M	15	-ve	12	-ve	6	N	12	-ve	12	-ve
8	M	4	N	13	-ve	11	-ve						
9	M	6	N	12	-ve	11	-ve						
10	F	3	N	-	-ve	-	-ve						
11	F	24	S	19	+ve	16	+ve	25	S	19	+ve	17	+ve
12	M	11	M	15	-ve	12	-ve	9	M	13	-ve	9	-ve
13	F	6	N	11	-ve	-	-ve						
14	F	1	N	-	-ve	-	-ve						
15	F	2	N	11	-ve	-	-ve						
16	F	9	M	13	-ve	12	-ve	11	M	13	-ve	12	-ve
17	M	5	N	12	-ve	-	-ve						
18	M	5	N	11	-ve	11	-ve						
19	M	6	N	13	-ve	13	-ve						
20	F	2	N	11	-ve	-	-ve						
21	M	1	N	-	-ve	-	-ve						
22	F	15	S	15	-ve	13	-ve	10	M	12	-ve	11	-ve
23	F	9	M	18	-ve	19	+ve	9	M	11	-ve	4	-ve
24	F	4	N	11	-ve	-	-ve						
25	M	3	N	12	-ve	-	-ve						
26	F	2	N	-	-ve	-	-ve						

Table (8) to be continued

No	Sex	Before Psychotherapy Evaluation						After Psychotherapy Re-evaluation					
		G.H.Q.		Anxiety		Depression		G.H.Q.		Anxiety		Depression	
		Score	Eval	Score	Eval	Score	Eval	Score	Eval	Score	Eval	Score	Eval
27	F	16	S	13	-ve	12	-ve	9	M	13	-ve	12	-ve
28	F	3	N	-	-ve	12	-ve						
29	F	5	N	14	-ve	11	-ve						
30	F	6	N	12	-ve	-	-ve						
31	F	12	M	14	-ve	18	+ve	11	M	13	-ve	12	-ve
32	M	3	N	11	-ve	12	-ve						
33	M	1	N	-	-ve	-	-ve						
34	F	1	N	-	-ve	-	-ve						
35	F	4	N	13	-ve	11	-ve						
36	F	7	N	12	-ve	14	-ve						
37	M	1	N	1	-ve	-	-ve						
38	F	12	M	13	-ve	12	-ve	10	M	11	-ve	5	-ve
39	F	2	N	-	-ve	-	-ve						
40	F	5	N	12	-ve	11	-ve						
41	F	3	N	12	-ve	10	-ve						
42	M	3	N	12	-ve	12	-ve						
43	F	1	N	-	-ve	1	-ve						
44	F	5	N	9	-ve	6	-ve						
45	F	20	S	19	-ve	15	-ve	13	M	7	-ve	3	-ve

Table (8): General healthe questionnaire, anxiety and depression scores and evaluations before and after psychotherpay in parents of the diabetic children.

(N.B.: F=father; M=mother)
(N.B.: N=normal or established, M=moderate, S=severe)

	Before Psychotherapy	After Pyschotherapy	Chi-square	P value	Significance
G.H.Q. Mean± S.D.	6.422± 5.739	2.933± 5.462	9.64	p<0.001	Highly significant
Anxiety Mean± S.D.	9.866± 6.341	3.222± 5.919	7.76	p<0.001	Highly significant
Depression Mean± S.D.	7.488± 6.700	2.666± 5.148	5.62	p<0.001	Highly significant

Table (9): General health questionnaire, anxiety, and depression mean scores before and after psychotherapy in parents of diabetic children. There is a high significant difference after therapy.

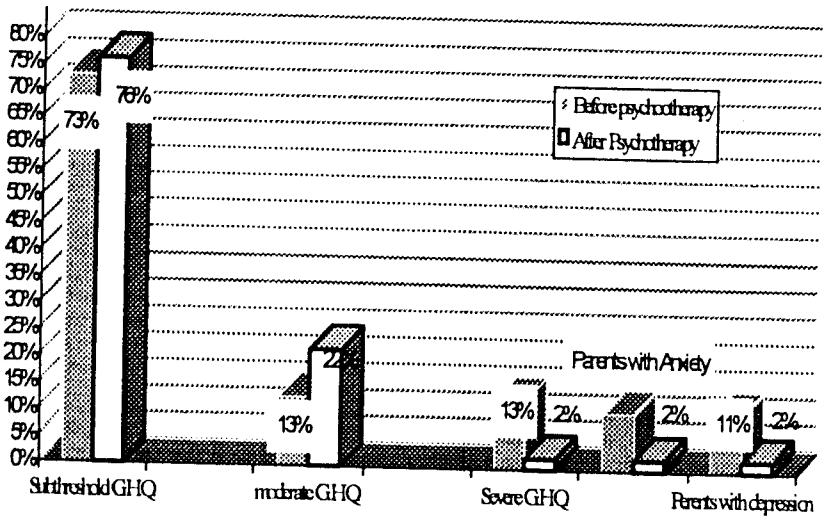

Fig (8): Percentage of parents of diabetic children with subthreshold, moderate and severe general health questionnaire, anxiety, and depression before and after psychotherapy.

There is a high significant difference after psychotherapy in the evaluation of parents with aberrant general health questionnaire. Chi-square=43.897 and $p<0.001$. Also, there is a moderate significant difference after psychotherapy in the evaluation of parents with anxiety and/or depression: chi-square=8.181 and $p<0.01$.

	Mothers (n=31)	Fathers (n=14)	chi-square	p value	Significance
G.H.Q. Mean± S.D.	3.516 ±2.593	3.428 ±2.102	0.11	p>0.05	non significant
Anxiety Mean± S.D.	6.354 ±5.823	7.285 ±5.730	0.50	p>0.05	non significant
Depression Mean± S.D.	4.612 ±5.818	5.287 ±8.10	0.36	p>0.05	non significant

Table (10): General health questionnaire, anxiety, and depression mean score values of mothers and fathers of the diabetic children.

There is no significant difference between mothers and fathers.

	Parents G.H.Q.	Correlated diabetic children G.H.Q.
	18	11
	6	4
	4	6
	5	15
	19	6
	1	3
	9	5
	4	2
	6	3
	3	4
	24	12
	11	5
	6	3
	1	6
	2	1
	9	13
	5	6
	5	1
	6	4
	2	1
	1	6
	15	9
	9	19
	4	5
	3	6
	2	11
	16	20
	3	2
	5	15
	6	6
	12	5
	3	3
	1	1
	1	3
	4	2
	7	3

Table (11) to be continued

	Parents G.H.Q.	Correlated diabetic children G.H.Q.
	1	12
	12	19
	2	11
	5	3
	3	5
	3	12
	1	2
	5	3
	20	2
Mean±S.D	6.422±5.739	6.6889±5.200

Table (11): general health questionnaire evaluation values of the parents and their correlated diabetic children.

As shown in table (11), there is a moderate correlation between the parents and their own diabetic children R=0.465.

There is no significant difference between general health questionnaire of both parents and their own diabetic children. Chi-square=0.32 and $p>0.05$.

* The degree of improvement in general health questionnaire in the diabetic children after psychotherapy was studied by multiple regression analysis using stepwise techniques. Variables examined were age, sex, social class, onset before or after 5 years, control of diabetes, last year history of (hypoglycemic attacks, hyperglycemic attacks, and hospital admission), intelligence quotient score, and the total score of the general health questionnaire before psychotherapy. The first variable detected was the G.H.Q. total score before psychotherapy, R=0.516; R square=0.266, $p<0.001$. (R square represent percentage of variability in degree of improvement explained by the total general health questionnaire before psychotherapy).

Degree of improvement was better for those who had higher general health questionnaire score before psychotherapy by 82%.

The second variable seleceted was the percentage of last year history of hyperglycemic attacks.

Degree of improvement was less for those who had hyperglycemic attacks by 250%. R=0.63; R-square =0.40, $p<0.05$.

By adjusting degree of improvemnt of general health questionnaire after psychotherapy to the variables of original general health questionnaire score and last year history of hyperglycemic attacks, no other variables could be deteced with significant effect.

* Degree of improvement in the anxiety score of the diabetic children after psychotherapy was studied using multiple regression analysis by stepwise technique. Variables examined were anxity score before psychotherapy, age, sex, social class, onset of diabetes, last year history of hyperglycemia, hypoglycemia, or hospital admission and intelligence quotient.

The first variable detected was the degree of anxiety score before psycotherapy. R=0.549; R-square=0.302, $p<0.001$. The degree of improvement was 50% better in higher anxiety scores before psychotherapy.

The other variable detected was the percentage of last year history of hyperglycemic attacks, were: R=0.632; R-square=0.399. $p<0.05$. The degree of improvement was less for those who had a last year history of hyperglycemic attacks by 200%.

The other variable were not significant after adjusting for the variables of anxiety score before psychotherapy and the incidence of the last year history of hyperglycemic attacks.

* The degree of improvement in the depression score of the diabetic children after psychotherapy was studied using multiple regression analysis by stepwise technique.

Variables examined were age, sex, social class, onset of diabetes, control of diabetes, last year history of (hypoglycemic attacks, hyperglycemic attacks, or hospital admission) and intelligence quotient score.

The fisrt variable detected was the degree of depression score befre psychotherapy. were: R=0.631; R-square=0.398, $p<0.001$.

The degree of improvement was 60% better in higher depression scores before psychotherapy.

The other variable detected was the percentage of the last year history of hyperglycemic attacks. were: R=0.702, R-square=0.494, $p<0.05$.

The degree of improvemnt was less by 250% for those who had a last year history of hyperglycemic attacks. The other variables were not significant after adjusting for the variables of depression score before psychotherapy and the percentage of last year history of hyperglycemic attacks.

Discussion

Discussion

Diabetes mellitus is a common chronic disorder with serious long term complications and a major impact on the lifestyle of the individual and his family ***(John, 1991).***

Children must maintain a delicate balance between daily insulin requirements, exercise, and diet to survive and to prevent or delay onset of complications.

The maintenance of a metabolic balance is parrelled by the need for psychological balance in relation to the illness and its demands ***(Mary and Luther, 1984).***

The diabetic child is affected by patterns of family functioning, reflected in parental attitudes and behaviours. Both child and family functioning are affeced by the particular characteristics of the diabetes

as: age of onset, duration, degree of control ***(Minuchin et al., 1985).***

The process of looking at the role of psychological and family factors in diabetes has been increasingly refined. In our study we took in consideration different possible factors which might affect the psychological balance of the diabetic child as sex, age, onset of diabetes, social class, degree of control of diabetes, last year history of either hypoglycemic attacks, hyperglycemic attacks, or admission to hospital.

Then we determine the psychiatric morbidity as well as the intelligence quotient (to assess the cognitive function) among the diabetic children versus matched control group.

We put in consideration that both diabetic children and control group are compatible ae regards age, sex and social class.

However, concerning psychiatric morbidity, there was significant differnce between the diabetic children group and the control group. This agrees with studies previously reported by ***Swift et al., (1967), Sullivan (1978), Zeichen (1986), Fawzy et al., (1986), Wilkinson et al., (1988), and Robinson (1991).***

Insulin dependant diabetes mellitus may cause additional psychiatric problems among affected children. On the other hand, ***Tavormina et al., (1976), Simonds (1977), Appleboom et al., (1977),*** did not find significant differences between diabetes and controls as regards psychiatric morbidity occurrence especially as psychiatric disorder diagnosis.

As reviewed by ***Ryan (1988)***, IDDM may exhibit cognitive deficits. Early onset of diabetes may be a particular risk factor for cognitive impairment. Intelligence quotient tests may be disrubted.

The same results was reoprted by ***Rovet et al., (1987), Giuseppe et al., (1990) and Ian et al., (1991).***

These results was confirmed or to say reduplicated in our study, where a significant difference in intelligence quotient in the diabetic childen versus matched control suubjects ($P<0.05$) was found. To be more clear, as it is an important point- in "class II" - intelligence quotient (highly intelligent), we found only 16.5% of the diabetic children group versus 33.3% of the control group. While in "class IV" (average intelligence) we found 42.4 % of the diabetic children group versus 20% of the control group. Considering the homogenous matching of scoial and environmental factors.

Regarding the different factors which might affect the psychiatric morbidity and cognitive function of the diabetic children. There was no association between the social class of the patient and the general health questionnaire score ($p>0.5$). Also no correlation

between social class of the patient and the anxiety evaluation ($p>0.05$). But, there were a significant association between social class of the diabetic patient and the depression evaluation ($p<0.05$).

The higher the social class, the higher the depression. Also, there is a significant association between the social class and the intelligence quotient ($p<0.05$). The higher the social class, the higher the intelligence quotient.

Thomas et al., (1992) noted that extraordinary individual differences exist in children's behavioral and psychological responce to social adversity. Challenges emanating from the social environment appear to evoke in children both visible and unseen internal responses, which are to some degree sterotypic for an individiual, but highly variable from child to child.

The second factor observed was the impact of the sex on the psychiatric morbidity of the diabetic child.

There was no significant difference between males and females as regards the general health questionnaire evaluation or anxiety and depression scores (P>0.05). The same result was observed in a previous studies by ***Berit et al., (1991) and Kawaguchi et al., (1991).***

An important factor investigated was the onset of diabetes mellitus either before or after 5 years old. We find no significant difference between these; onset of diabetes and the occurrence of psychiatric morbidity in the diabetic children (p.0.05). Also we did not find a significant correlation between the onset of diabetes and disruption of the intelligence quotient (p>0.05).

In accordance to our results, ***Joythi et al., (1991) and Berit et al., (1991)*** reported the same findings.

Controversial results were reported by ***Rovet et al., (1987) and Christopher et al., (1992)***, they reported that children who developed diabetes early in life before 5 years of age appear to have a greater

likelihood of performing more poorly an measures of intelligence compared with children who developed diabetes after 5 years of age.

The next important factor studied was the degree of control of diabetes mellitus. There is a high significant difference between diabetic children in good and poor control of diabets, and pscchyatric morbidity ($p>0.001$).

The poorer the control, the higher the pschiatric morbidity. The same results were observed by ***Swift et al., (1967), Koski (1969) and Simonds (1977)***. They noted that those children who get problems in emotional adjustment have greater problems with diabetes control. Also, ***Kimberly et al., (1984) and Christopher et al., (1992)*** reported the same findings. On the other hand, ***Fonagy et al., (1987)*** found significant association between psychiatric morbidity and good control of blood glucose. Also, ***Vandenberg et al., (1986)*** reported statistically significant decrease

in blood glucose level during stress. Also, ***Berit et al., (1991)*** eported no relation between metabolic control and psychiatric state.

The history of hypoglycemic attacks in the last year was observed, where we found significant association between pschiatric morbidity and hypoglycemia ($p<0.001$), as well as significant association between anxiety and hypoglycemia ($p<0.01$) and also significant association between depression and hypoglycemia ($p>0.05$).

These results are going with what reported by ***Hepburn et al., (1991), Christopher et al., (1992) and Anthony (1992).*** In contrast, a controversial results were reported by ***Berit et al., (1991) and Reihard (1991).*** They observed no association between hypoglycemia and psychiatric disturbances.

On the other hand, the last year history of hyperglycemia showed no significant association with

psychiatric morbidity ($p>0.05$). However, opposite results were reoprted by ***Swift et al., (1967), Kumento (1977) and Kimberly et al., (1984)***. But ***Berit et al.,*** reported no significant effect of hyperglycemia on psychiatric morbidity of the diabetic children.

Hospitalization with its all sequale and circumstances is an important factor to study. There was a high significant association ($p<0.001$) with anxiety, depression and, in general, psychiatric morbidity.

One of the new reliable statistical facilities is the use of logestic regression technique, to compare the most significant factors influencing general health questionnaire outcome. We found more psychiatric morbidity with poor control of diabetes and among older children. By the same technique, hypoglycemia was the most significant factor affecting anxiety.

All affected diabetic children with psychiatric morbidity (moderate or severe general health questionnaire score) were submitted to six months psychotherapy programme. Reevaluation was done at the end of the programme,. There were a significant difference between the general health questionnaire, anxiety and depression scores before and after pschotherapy.

The degree of improvement differ from one child to another, it depends on different factors as the perception of each child to therapy, familial factors, deep seated conflicts, the degree of metabolic control, socioeconomic factor and the initial severity of psychiatric morbidity reflected through the general health questionnaire score before psychotherapy.

All possible factors affecting degree of improvement in general health questionnaire after psychotherapy were studied by multiple regression analysis using stepwise technique. Degree of

improvement in the scores of general health questionnaire, anxiety and depression was better for those who had higher scores before psychotherapy and was less for those who had hyperglycemic attacks.

The percentage of diabetic children with severe general health questionnaire before psychotherapy was 16.5% but after psychotherapy was only 2.4%. Some of them was improved up to subthreshold score and some up to moderate score. So, the percentage of diabetic children with moderate general health questionnaire after psychotherapy was (3.5%), included those who did not improve or those improved from severe up to moderate general health questionnaire score. The subthreshold general health questionnaire score include 61.2% before psychotherapy and 94.1% after psychotherapy.

The success of treatment is dependant to some extent on the nature and severity of the symptoms and the context in which the symptoms occur. The

pediatrician plays an important role in making an appropriate referral and subsequently , in maintaining continued contact with the patient, the family and the therapist through the course of therapy.

Only two diabetic children did not improve after psychotherapy. Both of them proved to have severe social and familial problems. Their parents did not pay much attention to the importance of the therapy or to their children welfare.

Inspite of too much care given by the psychiatrist, but without family cooperation, the results were not fair due to the mutual impact of the diabetes mellitus on both diabetic child and his parents.

Psychiatric morbidity was assessed in the parents of diabetic children. Then all parents with moderate or severe general health questionnaire score were submitted to six months programme of psychotherapy. From the parents group, 68.9% were mothers and only

31.1% were fathers. The mothers high percentage (up to double fathers' percentage) could be refered to too much care given by the mothers to their children. Fathers being occupied by work and jobs may push mothers to attain clinical follow up more regular with their children.

On the other hand, there were no significant difference between mothers and fathers attending the clinic with their diabetic children regarding general health questionnaire, anxiety and depression scores. These results might be different if the study was done on a large scale and included both fathers and mothers attending and not attending the clinic with their children. Percentage of parents with anxiety and depression were reduced from 11.1% up to 2.2% after psychotherapy.

By studying the results of the general health questionnaire scores of both the parents and their own diabetic children, we find a moderate correlation of the

results R=0.465. Also, there was no significant difference between the results of both parents and children. An important issue in the treatment of diabetes is mediation of the relationship between family functioning and the childs' diabetic control. Family's psychological functioning affects diabetic control directly through its effect on the child's physiologic system and indirectly through its effect on the behavioural management of the child's diabetes ***(Marteau et al., 1987).***

In a study by ***Weissman et al., (1987)*** to determine the correlation of depression or other health problems in both children and their parents. It was prooved that children of depressed proband parents had a greater overall prevalence of major depression, substance abuse, psychiatric treatment and poor social functioning than children of normal proband parents.

Familial aggregation is well established for the most common psychiatric disorders, particulary for

antisocial personality disorders and affective disorders. Understanding the role of familial transmission in child psychiatric disorder is important. There is a combinig effect of genetic and cultural transmission on both parents and children ***(Earls, 1987)***.

Songer (1991) indicate that the impact of insulin dependant diabetes mellitus upon families with diabetic children was large and wide ranging.

It is not infrequently a practitionaer interviewing parents about asymptomatic child notes that the parent may need psychiatric evaluation or psycotherapy. The pediatrician may even consider, with good reason, that the child's problem might be ameliorated if the parent alone were treated. Parents perception of their children are modified by their own moods ***(Cundall, 1987).***

Angold et al., (1987) reoprted that there is a high level of disagreement in the reporting of children's dysphoric symptoms between children and their

parents. The child psychiatrist must initially accept the child's problem as presented by the parent and focus treatment in the area of parentral concern. Later, after a therapeutic relationship has developed the parent may be helped to see connections between the parents' problem and the child behaviour.

As proved by several studies, diabetic children and their parents are more liable to develop psychiatric problems comparing to non diabetic children and their parents. The effect of these disturbance might have a serious effect on the control of the disease or on the interrelationship between the child and his parents.

The pediatrician must attempt to maintain a delicate balance between the consideration of physical factors and psychological factros. The child in good metabolic control who is withdrawn, depressed and socially isolated or aggressive, hostile and resentful is not a healthy child. In view of these fact, it is appropriate that the pediatrician providing

comprehensive care to these children, also attempt to assess this aspect of functioning. It is possible to obtain a reasonable approximation of psychological functioning simply by expanding on a careful clinical history and by inquiring about the child's relationship with other members of the family. Due to the negative impact of diabetes on the parents, psychiatric evaluation of the parents must be considered. A major alternative to direct questioning is the use of structured questionnaire. The general health questionnaire (G.H.Q.) is a simple and sensitive screening tool which can be applied to the diabetic children and their parents to assess somatic symptoms, anxiety and insomina, social dysfunction, and severe depression.

The G.H.Q. has been used in studies of psychiatric morbidity in general practice, general medical wards and in a general population sample. These studies have yeilded the following percentage of high scores (above the threshold score):

48% in 105 general population in London ***(Tarnopolasky et al., 1979);*** 52% of women ***(Benjamin et al., 1982);*** 11.3% of the community population ***(Goldberg et al., 1976);*** 29.7% in general hospital out patients and 25% in general medical out patients in Philadelphia ***(Goldberg, 1972).***

So, not all children with diabetes and their families need to be evaluated by psychiatrists but a person with such expertise must be available to teams working with diabetic children for evaluation of patients with transitory or long-standing problems and for the development of treatment programs ***(Rosenbloom et al., 1982).***

All too often, pediatrician refer patients for psychotherapy without a clear understanding of what such treatment entails, or for which psychological disturbances it is best suited.

By screening, interviewing, and observing children and their parents, pediatrician can complete behavioral assessments to determine whether parents and children may benefit from further assessment or therapy for behavioral and development problems.

Health encompasses physiologic, psychologic and social aspects of children's development. From a comprehensive definition of health comes a broad range of goals for pediatric health supervision; including monitoring of children's behavioral develoopment and parent's concern about their children's behavior problems ***(Jack et al., 1992).***

The pediatrician who encounters a child with a psychological problem or function symptom, first needs to decide whether to manage the child within the confines of a busy office practice, or whether to refer the child to another specialist, a psychiatrist. If the pediatrician elects to treat the child, therapy may involve giving advice to or counseling the parents.

Occassionally, this is not enough, and family therapy or behavioral therapy or a combination of these modalities is attempted. The pediatrician need to talk with the child psychiatrist directly (face to face or over the telephone) for coping with the complex and long term patient-pediatrician relationships in chronic care ***(Arlan, 1984).***

Conclusion

Conclusion

(1) As proved by the current study, diabetic children are more liable to develop psychiatric problems comparing to non diabetic children.

General health questionnaire score mean of diabetic children was 7.97, while it was 4.1 for the control group.

(2) There are correlation between parents and their own diabetic children regarding psychiatric morbidity.

(3) Diabetes mellitus proved-in our study- to be a risk factor for cognitive impairment. Intelligence quotient tests may be disrubted in diabetic children when compared to matched control group. In diabetic children group 16.5% with high intelligence and 42.4% with average intelligence, while in control group 33.3% with high intelligence and 20% with average intelligence.

(4) Possible risk factors wich might affect the psychiatric morbidity and cognoitive function of the diabetic children were:

(a) Social class: the higher the social class the higher the depression occurrence and intelligence quotient score.

(b) Age: more psychiatric morbidity were found among older diabetic children.

(c) Sex: males and females had equal chances in psychiatric morbidity and cognitive impairment.

(d) Metabolic control of diabetes mellitus; the poorer the control, the higher the psychiatric morbidity. Repeated hypoglycemia were associated with anxiety and depression.

(e) Also, repeated hospitalization proved to be associated with higher occurrence of psychiatric morbidity, anxiety and depression.

(5) Efficiency of the assessment psychotheraby programme were proved. Only 2.4% of the diabetic

children had severe general health questionnaire score after psycotherapy compairing with 16.5% before psychotherapy. Also, 94.1% of the diabetic children with subthreshold general health questionnaire compaired to 61.2% before psychotherapy.

(6) Parents with severe general health questionnaire score were 2.2% after psychotherapy, while before psychotherapy, the percentage was 13.3%.

Recommendations

Recommendations

(1) Further expanded and advanced research is a must, to detect the most frequent and serious clinical psychiatric problems that might affect diabetic children with putting a stress on the best possible therapy for each problem.

(2) The necessity of establishing a regular rules to assess all diabetic children for psychological functioning at least at registration and periodically every six months. Also re-evaluation must be done on demand according to the nature of each case.

This assessment could be done simply by careful clinical history, by talking to the parents and by the use of the general health questionnaire which considered a simple and sensitive screening tool.

(3) Psychiatric evaluation of the parents must be put in consideration due to the mutual negative impact of both

the psychological functioning of both the parents and their diabetic children.

(4) Special care must be given to diabetic children under special circumstances as diabetic children with poor metabolic control, with frequent attacks of hypoglycemia, with frequent hospitalization histroy and children with familial troubles or parents with psychic troubles.

(5) An open channel between the pediatrician and the psychiatrists must be established. A team work must be available for the benefit of the child.

The basics of the childhood psychiatry must be included in the syllabus of post-graduate pediatric studies.

Summary

Summary

Insulin dependant diabetes mellitus has been proved to have a major impact on the life style of the diabetic children and their parents. A lot of psychiatric troubles was observed. Also cognitive dysfunction is increasingly recognized as a possible complication of diabetes. In the current research, we try to detect the prevalence of psychiatric morbidity and cognitive dysfunction among diabetic children. We try also to detect the different risk factors affecting the diabetic children. We also try to detect the psychological changes of the parents and its correlation with the changes of their own diabetic children.

The sample of this study was selected from the Ain-Shams University Children's hospital-Diabetes clinic. It includes (85 diabetic children); well balanced between females (43) and males (42). Their ages ranged between 7 to 15 years. The control group (30)

was matched with the diabetic children in the criteria of sex, age and social class.

Also, 45 parents, of some studied diabetic children were included in the study. The diabetic children group were subjected to full history taking and medical examination. Determination of the social class of the family had been conducted through application of Murphy's social class scale. Then determination of the intelligence quotient of the diabetic children and control groups using Wechsler's intelligence scale for children had been done.

Psychiatric morbidity for the control group and for diabetic children were observed and re-assessed after psychotherapeutic course for those proved clinically and through questionnaire to have these morbidity. The assessment were conducted by using general health questionnaire designed by Golldberg. Also determination of the prevalence of anxiety and depression among the diabetic children and their

parents before and after psychotherapy using anxiety scale designed by ***Abd-ElHamid and El-Nial*** and depression scale designed by ***Abd-El Zaher***.

The main findings in the current study can be summarized through these results:

* The general health questionnaire score mean in the diabetic children was 7.97 and in the control group was 4.1. The diabetic children are more liable to psychiatric morbidity.

* The percentage of diabetic children with high intelligence quotient was 16.5 while in control group was 33.3%. While diabetic children with average intelligence was 42.4% compared to 20% in control group. i.e. diabetes mellitus had a negative impact on cognitive function.

* Social class was proved to be a risk factor in prevalence of depression among diabetic children. The

higher the social class, the higher the depression.

* Metabolic control of diabetes mellitus was proved to be of great importance in developing psychiatric disturbance in poor control diabetic children. Other related factors to poor control as repeated hypoglycemia and repeated hospitalization had the same influence.

* The efficiency of the psychiatric management of both the diabetic children and the parents was evidenced in the improvement of general health questionnaire, anxiety and depression scores. Also, the percentages of diabetic children with severe and moderate general health questionnaire before therapy were 16.5% and 22.4% respectively. They decreased to 2.4% and 3.5% respectively after therapy.

Also, the percentages in parents before and after therapy were 13.3% and 2.2% respectively for those with severe general health questionnaire. Also, a

correlation between the psychiatric morbidity of both parents and their own diabetic children was proved.

Degree of improvement in diabetic children was better for those who had higher general health score before psychotherapy.

Abstract

Abstract

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Effect of Psychotherapy on Diabetic Children and Their Parents

Unpublished Doctor of Philosphy Disseration.
Post-Graduate Institute of Childhood studies-Ain Shams University.
Medical Department.

The main aim of this study is to detect the prevalence of psychiatric morbidity among diabetic children and their parents and the correlation between both of them. Also, to recognize differnt risk factors that might affect the psychological functioning of diabetic children. Lastly, is to demonstrate the effect of psychotherapy on psychiatric disorders of diabetes mellitus.

85 Insulin dependant diabetic children with regualr files on the children's hospital at Ain-Shams University, 30 non diabetic children as a control group (matched in age, sex, and social class), and 45 parents of the diabetic children were conducted in the study. We used for screening of the psychiatric morbidity, anxiety and depression; the general health questionnaire designed by Goldberg, anxiety scale designed by Abdel-Hamid and El-Nial and depression scale designed by Abdel-Zaher respectively.

We also used Wechsler intelligence scale for children to assess the intelligence quotient of diabetic children and the control children groups.

The psychotherapy was conducted by M.D. qualified professional therapists at the institute of Psychiatry-Ain Shams University.

The current study proved that diabetic children are more liable to develop psychiatric problems compairing to non diabetic children. There are correlation between psychiatric morbidity of both parents and their

own diabetic children. The risk factors for developing psychiatric disturbance are, older diabetic children, higher social class, poor metabolic control, frequent hypoglycemia and frequent hospitalization.

Diabetic children are more liable to develop cognitive impairment. Efficiency of psychotherapy programme were proved with high significance on both diabetic children and their parents.

Key Words: Diabetes Mellitus; Parents of diabetic children; Psychotherapy with diabetes; Psychiatric morbidity in diabetic children.

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المراجع العربية:

١. د/ مايسة النيال و د/ مدحت عبد الحميد (١٩٩١):

الفروق بين القلق و الأكتئاب بين مرضي روماتيزم القلب و الأسوياء.

المؤتمر السنوي الرابع للطفل المصري

القاهرة – مصر.

٢. د/ محمد عبد الظاهر الطيب (١٩٨٣):

إختبار الأكتئاب العربي – ماريا كو فاكس.

دار المطبوعات الجديدة – الاسكندرية – مصر.

Appendix

استبيان الصحة العامة (النفسية)

مركز الطب النفسي

مستشفيات جامعة عين شمس

نحن نود ان نعرف ما إذا كانت لديك أي مشاكل في فترة الأسابيع القليلة السابقة أي نستفسر عن صحتك بشكل عام. نرجو منك الأجابة علي كل الأسئلة التالية و ذلك بوضع خط تحت أكثر الأجابات تطابقا مع حالتك و تذكر اننا نود التعرف علي شكواك الحالية و القريبة و ليس تلك الشكاوي التي لديك في الماضي. من المهم جدا أن تحاول الأجابة علي جميع الأسئلة و نشكرك مقدما علي تعاونك معنا.

الأسم:..... السن..... تاريخ الميلاد.....

النوع: ذكر ( ) أنثي ( )

الوظيفة أو المهنة بالتفصيل:.....

مستوي التعليم: أمي ( ) يقرأ و يكتب ( ) أبتدائية أو أعدادية ( ) شهادة متوسطة ( )

بكالوريوس أو ليسانس ( ) ماجستير ( ) دكتوراة ( )

الحالة الأجتماعية: أعزب ( ) متزوج ( ) مطلق ( ) أرمل ( )

مرات الزواج: مرات الطلاق:

عدد الأولاد: ذكور ( ) اناث ( )

من اكبر الأولاد: من أصغر الأولاد:

الفاحص: مكان الفحص: التاريخ:

في الفترة الأخيرة:

(ا) ١- هل كنت تشعر انك بخير و أن صحتك جيدة؟

أفضل من المعتاد - كالمعتاد- أقل من المعتاد- أقل بكثير من المعتاد

٢- هل كنت تشعر انك في حاجة الي مقوي جيد؟

- لم يحدث ابدا - ليس باكثر من المعتاد

-أكثر من المعتاد - أكثر بكثير من المعتاد

٣- هل كنت تشعر بهبوط عام و انك لست كما ينبغي؟

- لم يحدث ابدا - ليس باكثر من المعتاد

-أكثر من المعتاد - أكثر بكثير من المعتاد

٤- هل كنت تشعر انك مريض؟

- لم يحدث ابدا - ليس باكثر من المعتاد

-أكثر من المعتاد - أكثر بكثير من المعتاد

٥- هل كنت تعاني من أي ألم بالرأس؟

- لم يحدث ابدا - ليس باكثر من المعتاد

-أكثر من المعتاد - أكثر بكثير من المعتاد

٦- هل كنت تشعر و كأن شئ ما يحيط برأسك أو يضغطها؟

- لم يحدث ابدا - ليس باكثر من المعتاد

-أكثر من المعتاد - أكثر بكثير من المعتاد

٣٢- ساعات احس بزغللة في عيني	نعم	لا
٣٣- ساعات احس اني مش قادر اقعد علي كرسي لمدة طويلة و عايز اتحرك من مكان لمكان	نعم	لا
٣٤- انا دايما مهموم (شايل الهم بدري)	نعم	لا
٣٥- كل اللي بيشوفني بيقول لي اني كنت أحسن من كدة في المذاكرة	نعم	لا
٣٦- باحس اني متخايق من رأي الناس في الأن	نعم	لا

٧- هل كنت تشعر بحالات مفاجئة من البرودة أو السخونة؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

(ب) ١- هل نقصت ساعات نومك بسبب التفكير و القلق؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٢- و اذا غلبك النوم هل تجد صعوبة في ان تظل نائما؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٣- هل تشعر بشكل دائم انك مجهد؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٤- هل اصبحت سريع الأثارة و عصبي المزاج؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٥- هل اصبحت تشعر بالخوف أو الرعب دون سبب وجيه؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٦- هل تشعر ان المشاكل قد تراكمت من حولك؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٧- هل تشعر انك عصبي و متوتر طوال الوقت؟

- لم يحدث ابدا
- ليس باكثر من المعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

(م) ١- هل نجحت في ان تبقي منهمكا و مشغولا؟

- أكثر من المعتاد
- كالمعتاد
- اقل بكثير من المعتاد
- أكثر بكثير من المعتاد

٢- هل اصبحت تحتاج لوقت أطول في انجاز أعمالك؟

- اسرع من المعتاد
- كالمعتاد
- أقل من المعتاد
- أطول بكثير من المعتاد

٣- هل تشعر انك بشكل عام تجيد ما تفعلة؟

- افضل من المعتاد
- كالمعتاد تقريبا
- أسوأ من المعتاد
- أسوأ بكثير من المعتاد

٤- هل انت راضي بالمستوي الذي تؤدي به أعمالك؟

- اكثر من المعتاد
- كالمعتاد
- اقل بكثير من المعتاد
- أقل بكثير من المعتاد

٥- هل تشعر انك تقوم بدور مفيد فيما تنجزة من أعمال؟

- اكثر من المعتاد
- كالمعتاد
- اقل من المعتاد
- أقل بكثير من المعتاد

٦- هل تشعر انك قادر علي انجاز القرارات؟

- اكثر من المعتاد
- كالمعتاد
- اقل من المعتاد
- أقل بكثير من المعتاد

٧- هل تستطيع الستمتاع بنشاطك اليومي العادي؟

- اكثر من المعتاد
- كالمعتاد
- اقل من المعتاد
- أقل بكثير من المعتاد

(د) ١- هل تشعر انك شخص لا قيمة له؟

- لم يحدث ابدا
- كالمعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٢- هل تشعر انه لا امل في الحياة علي الأطلاق؟

- لم يحدث ابدا
- كالمعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٣- هل تشعر ان الحياة لا تستحق ان نعيشها؟

- لم يحدث ابدا
- كالمعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٤- هل راودتك فكرة التخلص من حياتك؟

- قطعا لم يحدث
- لا أظن
- راودتني الفكرة
- قطعا حدث

٥- هل تشعر احيانا انك لا تستطيع ان تفعل شيئا نظرا لان أعصابك متوترة؟

- لم يحدث ابدا
- كالمعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٦- هل تمنيت ان تموت بحيث تبتعد عن كل ما هو حولك؟

- لم يحدث ابدا
- كالمعتاد
- أكثر من المعتاد
- أكثر بكثير من المعتاد

٧- هل وجدت ان فكرة التخلص من حياتك تراود ذهنك كثيرا؟

- قطعا لم يحدث
- لا أظن
- راودتني الفكرة
- قطعا حدث

(مقياس الأكتئاب)

اختار العبارة اللي بتوصف مشاعرك و أفكارك في الأسبوعين الأخرين

١- بابقي حزين أحيانا

- بابقي حزين في أوقات كثيرة

- بابقي حزين طول الوقت

٢- مافيش حاجة حاتمشي كويس بالنسبة لي ابدا

- انا مش متأكد من ان الأشياء و الظروف حتبقي كويسة بالنسبة لي

- الأشياء و الظروف حتبقي كويسة بالنسبة لي

٣- انا باعمل اغلب الحاجات بطريقة كويسة

- انا باعمل حاجات كثيرة بطريقة غلط

- انا باعمل كل حاجة بطريقة غلط

٤- فيه حاجات كثيرة بتسليني

- بعض الحاجات و الأشياء بتسليني

- مفيش حاجة بتسليني

٥- في كل الأوقات انا وحش او مش كويس

- في اوقات كثيرةانا وحش او مش كويس

- احيانا انا وحش او مش كويس

٦- احيانا بافكر في أشياء وحشة (مش كويسة) بتحصل لي

- انا قلقان و مشغول من ان بعض الأشياء اللي مش كويسة حاتحصل لي

- انا متأكد ان أشياء فظيعة حاتحصل لي

٧- انا بكره نفسي

- انا لا احب نفسي

- انا بحب نفسي

٨- كل الحاجات الوحشة أو اللي مش كويسة بتكون بسببي انا

- كثير من الحاجات الوحشة أو اللي مش كويسة بتكون بسببي انا

- مش دايما الحاجات الوحشة أو اللي مش كويسة بتكون بسببي انا

٩- انا مابفكرشي في اني اموت نفسي

- انا بافكر في اني اموت نفسي لكن مش حاعمل كدة

- انا عايز اموت نفسي

١٠- يوميا باشعر بأني عايز اعيط (ابكي)

- في أوقات كثيرة باشعر باني عايز اعيط

- أحيان باشعر باني عايز اعيط

١١- فيه اشياء بتضايقني طول الوقت

- فيه اشياء بتضايقني أوقات كثيرة

- فية اشياء بتضايقني أحيانا

١٣- انا باحب اكون مع الناس

- في اوقات كثيرة انا ماحبش اكون مع الناس

- انا مش عايز أكون مع الناس ابدا

١٣- انا ماقدرشي (لا استطيع) ان اقرر رأي في الأشياء

- من الصعب علي أن اقرر أو أحدد رأي في الأشياء

- أنا باقرر رأي في الأشياء بسهولة

١٤- انا شكلي كويس

- فيه بعض الأشياء مش كويسة في شكلي

- أنا شكلي مش كويس أو وحش

١٥- يجب علي ان ادفع نفسي طول الوقت علشان اعمل واجبات المدرسة

- يجب علي ان ادفع نفسي اكثر من مرة علشان اعمل واجبات المدرسة

- واجبات المدرسة مش مشكلة كبيرة بالنسبة لي

١٦- كل ليلة ببقي صعب علي اني انام

- في ليالي كثيرة ببقي صعب علي اني انام

-انا بنام كويس جدا

١٧- باشعر احيانا بأني مجهد او تعبان

- باشعر في اوقات كثيرة بأني مجهد او تعبان

- باشعر طول الوقت بالتعب و الأجهاد

١٨- في غالبية الأيام ببقي معنديش نفس للأكل

١٨- في غالبية الأيام ببقي معنديش نفس للأكل

- في ايام كثيرة ببقي معنديش نفس للأكل

- انا باكل كويس

١٩- انا مش قلقان من أي الام او اوجاع

- في مرات كثيرة بابقي قلقان من بعض الالام و الأوجاع

- طول الوقت ببقي قلقان من بعض الالام و الأوجاع

٢٠- انا لا أشعر بالوحدة

- في اوقات كثيرة باشعر بالوحدة

- طول الوقت باشعر بالوحدة

٢١- انا عمري ما شعرت بالمتعة في المدرسة

- احيانا باشعر بالمتعة في المدرسة

- في اوقات كثيرة باشعر بالمتعة في المدرسة

٢٢- انا عندي اصحاب كثير

- انا عندي بعض الأصحاب و لكن باتمني يكون عندي اصحاب اكثر

- انا معنديش ولا صاحب

٢٣- عملي - شغلي - المدرسي كويس

- عملي المدرسي مش كويس زي ماكان قبل كده

- عملي المدرسي وحش قوي في مواد كنت دايما كويس فيها

٣٤- انا لا يمكن ان اكون كويس مثل بقية زملائي

- لو اردت فأني اقدر أكون كويس مثل باقي زملائي

- انا كويس زي باقي زملائي

مقياس القلق

١- ساعات كثيرة احس بصداع في دماغي	نعم	☐
٢- باعرق بسرعة	نعم	☐
٣- حاسس ان نشاطي بقي غير الأول	نعم	☐
٤- انا عصبي	نعم	☐
٥- دايما فكري مشغول ببكرة	نعم	☐
٦- أحب اقعد لوحدي كثير	نعم	☐
٧- لما يكون بالي مشغول معرف ش ابلع الأكل أو ابلعه بصعوبه	نعم	☐
٨- وجهي يحمر بسرعة	نعم	☐
٩- مبقاش لي نفس العب مع اصحابي زي الأول	نعم	☐
١٠- مش حاسس اني مرتاح	نعم	☐

١١- مش عارف اركز في دروسي	نعم	لا
١٢- انا ماليش اصحاب كثير	نعم	لا
١٣ -ساعات كثير ماما أو بابا يقولوا لي ان وجهك أصفر	نعم	لا
١٤- لما افكر في حاجة معمة قلبي يدق بسرعة قوي	نعم	لا
١٥- بقيت اتعب من أقل مجهود	نعم	لا
١٦- حاسس اني زهقان	نعم	لا
١٧- حاسس ان مستواي في المدرسة بقي أقل من الأول	نعم	لا
١٨- اصحابي بيزعلوا مني علشان مبرضاش العب معاهم زي الأول	نعم	لا
١٩- صحتي مش كويسة دلوقتي	نعم	لا
٢٠- ساعات باحس اني مش عارف اتنفس و أني مخنوق	نعم	لا

٣١- حركتي قلت عن الأول	نعم	لا
٣٢- ساعات بحلم احلام وحشة بالليل	نعم	لا
٣٣- كل ماافتم كتاب الاقي نفسي سرحت	نعم	لا
٣٤- خسرت اصحاب كثير في الأيام الأخيرة	نعم	لا
٣٥- ساعات كثير مبيبقاش لي نفس للأكل	نعم	لا
٣٦- ساعات كثير بيجيني اسهال	نعم	لا
٣٧- ساعات بلاحظ علي الناس بعض الحركات العصبية	نعم	لا
٣٨- انا دايما محتار	نعم	لا
٣٩- بقيت انسي كل اللي اذاكرة	نعم	لا
٣٠- ساعات بابقي مش عايز اشوف حد	نعم	لا
٣١- وزني نقص في الأيام الأخيرة	نعم	لا

مستخلص الرسالة

دكتور/ حسام الدين حسين الإسناوي

أثر العلاج النفسي علي الأطفال المصابين بمرض البول السكري ووالديهم.

رسالة مقدمة توطئة للحصول علي درجة الدكتوراة في الفلسفة من معهد دراسات الطفولة

قسم الدراسات الطبية

جامعة عين شمس.

تستهدف الرسالة لإكتشاف معدل إنتشار الإضطرابات النفسية بين الأطفال المصابين بمرض البول السكري ووالديهم و أيضا لتحديد العلاقة بين تلك الإضطرابات في كلا من الأطفال ووالديهم. أيضا تستهدف الرسالة للتعرف علي عوامل الخطورة المختلفة التي قد تؤثر سلبا علي الحالة النفسية للأطفال نتيجة لإصابتهم بمرض البول السكري. و أخيرا تستهدف إيضام تأثير العلاج النفسي علي تلك الإضطرابات المصاحبة للمرض.

و قد تم إختيار ٨٥ طفلا من اللذين لهم سجلات منتظمة في عيادة البول السكري التخصصية بمستشفي الأطفال بجامعة عين شمس و أيضا أختير عدد ٣٠ طفلا كمجموعة مقارنة متوائمة في السن و الجنس و المستوي الإجتماعي مع عينة البحث و أيضا عدد ٤٥ من الأمهات و الأباء لبعض الأطفال في عينة البحث.

و استعملنا للمسح النفسي للجميع إستبيان الصحة العامة المصمم بواسطة د. جولدبيرج، كما تم إستعمال مقياس القلق المصمم بواسطة د. عبد الحميد و د. النايل و مقياس الإكتئاب المصمم بواسطة د. عبد الظاهر للأطفال المرضي و أبائهم. و استعمل أيضا مقياس الذكاء للأطفال للدكتور ويكسلر و ذلك للمجموعة المرضي و أبائهم.

و أجريت جلسات العلاج النفسي بواسطة اخصائيين مؤهلين بدرجة الدكتوراة بمركز الطب النفسي -كلية الطب-جامعة عين شمس.

و قد اوضحت نتائج الدراسة أن الأطفال المصابين بمرض البول السكري أكثر عرضة من غيرهم للأضطرابات النفسية، كما توجد علاقة و ثيقة بين الإضطرابات النفسية المصاحبة للمرض في كلا من الأطفال المرضي و أبائهم. و قد حددت عوامل الخطورة المصاحبة للمرض و التي قد تؤثر علي حالة الأطفال النفسية في الأتي:

- الأطفال الأكبر سنا أكثر عرضة للأضطرابات و الأطفال ذو المستوي الإجتماعي المرتفع و الأطفال المعرضين لإضطرابت في السيطرة علي مستوي السكر في الدم و خاصة إنخفاض نسبة السكر و الأطفال المعرضين للتنويم المتكرر في المستشفيات.

كما لوحظ أن هؤلاء الأطفال المرضي معرضون أيضا للأضطرابات الوجدانية أكثر من غيرهم.

و اثبتت الدراسة كفائة برنامج العلاج النفسي للأطفال المرضي ووالديهم بالتحسن الكبير في التقييم النفسي بعد العلاج.

الكلمات المفتاح:

* الأطفال المصابين بمرض البول السكري.
* أباء الأطفال المصابين بمرض البول السكري.
* العلاج النفسي مع البول السكري.
* الأضطرابات النفسية مع الأطفال المصابين بمرض البول السكري

ملخص الرسالة

ثبت ان مرض البول السكري المعتمد علي الأنسولين ذو تاثير كبير علي منهاج حياة الطفال المصابين به و أيضا علي والديهم. فقد لوحظ ان العديد من الأضطرابات النفسية و عدم الموائمة في الوظائف الوجدانية في تزايد مستمر كمضاعفات لمرض البول السكري.

وفي دراستنا الحالية نحاول ان نكتشف و نحدد معدل الأصابة بتلك الأضطرابات النفسية و الوجدانية بين الأطفال المصابين بالبول السكري. كما نحاول ان نكتشف المخاطر المختلفة التي قد تؤثر علي هؤلاء الأطفال. كما نحاول ان نكتشف التغيرات النفسية التي قد تصيب الأباء و مدي علاقتها بالتغيرات التي قد تصيب ابنائهم المرضي بالبول السكري.

وقد تم أخذ عينة البحث من الأطفال المترددين علي عيادة البول السكري التخصصية و الملحقة بمستشفي الأطفال بكلية الطب بجامعة عين شمس. و تضمنت العينة عدد خمسة و ثمانون طفلا منهم اثنان و اربعون ذكور و ثلاث و اربعون اناث، و تتراوح اعمارهم بين السابعة و خمسة عشرة سنة. كما تم اختيار عدد ثلاثون طفلا لا يعانون من المرض كمجموعة للمقارنة و روعي في إختيارهم توافقهم في الجنس و العمر و المرتبة الإجتماعية مع عينة البحث.

و تضمنت الرسالة عدد خمسة و أربعون من أباء بعض الطفال في عينة البحث و قد تم أخذ تاريخ طبي و فحص شامل للأطفال المصابون بمرض البول السكري، كما تم تحديد المستوي الإجتماعي لهم و لعائلتهم عن طريق تطبيق معدلات المستوي الإجتماعي المقننة بواسطة "ميرفي".

كما تم تحديد معدلات الذكاء بواسطة إختبارات الذكاء للأطفال المقننة بواسطة " وبكسلر".

كما تم قياس الأضطرابات النفسية بواسطة إستبيان الصحة العامة المقنن بواسطة "جولدبيرج"

و قياس معدل القلق بواسطة إختبار القلق المقنن بواسطة "عبد المعبد" و "النابل". و قياس معدل الإكتئاب بواسطة إختبار الإكتئاب المصمم بواسطة "عبد الظاهر".

و أيضا تم إجراء قياس الإضطرابات النفسية و القلق و الإكتئاب عند الأباء و مجموعة اطفال المجموعة المقارنة. و قياس معدل الذكاء لأطفال المجموعة المقارنة.

و يمكن تلخيص النتائج الرئيسية كالأتي:

- متوسط إستبيان الصحة العامة في الأطفال المصابون بالبول السكري هو (٧،٩٧) و في مجموعة المقارنة (٤،١) و ذلك يدل علي ان الأطفال المصابين بالسكر أكثر عرضة للأصابة بالإضطرابات النفسية.

- نسبة الأطفال المصابين بالبول السكري و الحاصلين علي معدل ذكاء مرتفع (١٦،٥٪) في حين ان النسبة في مجموعة المقارنة (٣٣،٣٪). كما ان الأطفال المرضي و الحاصلين علي ذكاء منخفض (٤٣،٤٪) في حين ان نسبتهم فقط (٣٠٪) في اطفال مجموعة المقارنة ، و هذا يدل علي ان مرض البول السكري له تأثير سلبي علي الوظائف الوجدانية.

- و قد ثبت ان المستوي الإجتماعي له تأثير خاص علي اطفال مرض البول السكري. فكلما ارتفع المستوي الإجتماعي ارتفعت نسبة الإكتئاب.

- و من العوامل الهامة جدا و المؤثرة هو درجة السيطرة علي مرض البول السكري، فكلما زادت نسبة نوبات هبوط السكر في الدم و ايضا التنويم في المستشفيات كلما زادت الإضطرابات النفسية.

و لقد وجدنا ان كفائة العلاج النفسي للأطفال المرضي ووالديهم جيدة كما ثبت من مستوي التحسن في نتيجة إستبيان الصحة العامة و إختبارات القلق و الإكتئاب بعد برنامج العلاج. فقد كانت نسبة الأطفال المرضي بالسكر و الحاصلين علي نتائج سيئة جدا في إستبيان الصحة العامة (١٦،٥٪) و انخفضت إلي (٣،٤٪) بعد العلاج، أما الحاصلين علي نتائج متوسطة فقد كانت نسبتهم (٣٣،٤٪) و انخفضت الي (٣،٥٪) بعد العلاج.

و ايضا إنخفضت النسبة في الأباء العاطين علي نتائج سيئة من(٣و١٣٪) الي (٢،٣٪) بعد العلاج.

- و لوحظ و جود علاقة و ثيقة بين الإضطرابات النفسية بين الأبناء ووالديهم.

- و قد ثبت ان درجة التحسن تكون اكبر بعد العلاج في الأطفال العاطين علي نتائج سيئة قبل العلاج.

شكر

أشكر السادة الأساتذة الذين قاموا بالإشراف و هم:

١. الأستاذة الدكتورة / منى عبد القادر سالم.
استاذ طب الأطفال – كلية الطب – جامعة عين شمس.

٢. الدكتور / احمد سعد محمد علي
مدرس الطب النفسي– – كلية الطب – جامعة عين شمس.

٣. الدكتورة/ سوسن السيد مصيلحي
مدرس طب الأطفال – كلية الطب – جامعة عين شمس.

و أيضا اشكر من تعاونوا معي في البحث و هم :

١. الدكتورة/ منى منصور
مدرس الطب النفسي– كلية الطب – جامعة عين شمس.

٢. الأستاذ الدكتور/ مصطفي جمال الدين
استاذ مساعد الصحة العامة– كلية الطب – جامعة عين شمس.

و ايضا الهيئات التالية:

١. عيادة مرضي البول السكري بمستشفي الأطفال – جامعة عين شمس.

٢. مركز الطب النفسي – كلية الطب – جامعة عين شمس.

٣. قسم الدراسات الطبية بمعهد الدراسات العليا للطفولة

٤. قسم الصحة العامة – كلية الطب – جامعة عين شمس.

جامعة عين شمس

الكلية / معهد الدراسات العليا للطفولة -قسم الدراسات الطبية

رسالة دكتوراة

اسم الطالب / حسام الدين حسين حسن الأسناوي

عنوان الرسالة / أثر العلاج النفسي علي الأطفال المصابين بمرض إرتفاع نسبة السكر في الدم ووالديهم

أسم الدرجة: دكتوراة

لجنة الأشراف

١- الاسم/ أ.د منى عبد القادر سالم

٢- الوظيفة/ استاذ طب الأطفال-طب عين شمس

١- الاسم/د. سوسن السيد مصيلحي

٢- الوظيفة/مدرس طب الأطفال-طب عين شمس

١-الأسم/د.احمد سعد محمد علي

٢-الوظيفة/مدرس الطب النفسي-طب عين شمس

تاريخ البحث: ٢١ / ٢ /١٩٩٢

الدراسات العليا

ختم الأجازة:

أجيزت الرسالة بتاريخ ١٧ / ١٢ / ١٩٩٥

موافقة مجلس الكلية

٩ / ١ / ١٩٩٦

موافقة مجلس الجامعة

/ / ١٩٩

جامعة عين شمس
معهد الدراسات العليا للطفولة
قسم الدراسات الطبية

أثر العلاج النفسي علي الأطفال المصابين بمرض إرتفاع نسبة السكر في الدم ووالديهم

دراسة مقدمة

للحصول علي درجة الدكتوراة في الفلسفة في دراسات الطفولة
قسم الدراسات الطبية-معهد الدراسات العليا للطفولة

من الطبيب

حسام الدين حسين حسن الإسناوي

بكالوريوس الطب والجراحة ١٩٨٣ - ماجستير طب الأطفال ١٩٨٨

تحت اشراف

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الدكتورة / سوسن السيد مصيلحي

مدرس طب الأطفال - كلية الطب - جامعة عين شمس

الدكتور / احمد سعد محمد علي

مدرس الطب النفسي - كلية الطب - جامعة عين شمس

جامعة عين شمس

١٩٩٥