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Original Article

Mothers' emotional reactions to diagnosis of diabetes type I in their children

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Abstract

BACKGROUND: Diabetes can disturb the balance of the family system and increase tension in the patients and their families. The proper control of diabetes in children is related to the mothers' emotional control and reduction of their conflicts. Therefore, recognizing the parents' emotional reactions is an important factor for intervention. This study tried to find out the parents' emotional reaction to the diagnosis of insulin-dependent diabetes in their children.

METHODS: In this prospective, descriptive and analytical study, the samples were selected among mothers referred to the Diabetes Center of Amin Hospital after the diagnosis of insulin-dependent diabetes in their children by endocrinologist. Sampling method was convenience method. Data were collected using SCL90 questionnaire in five steps (0, 1, 3, 6, 12 months after diagnosis) and the statistical tests were used for analysis. Selected mothers were 30 but just 20 of them completed the study.

RESULTS: The major problems of mothers at the onset of diagnosis was depression, physical complain, anxiety and obsessive-compulsive respectively. One month later, the problems were depression, physical complains, obsessive-compulsive and anxiety. In month 3, 6, and 12 after the diagnosis, the problems were depression, physical complain and obsessive-compulsive respectively. It showed that the mean score of parents' emotional reactions decreased by time.

CONCLUSION: The mothers of diabetic children face emotional problems in the first year after the diagnosis but they adjust themselves with their children's disease. Therefore, it is recommended that hospitals and diabetes centers provide psychiatric and psychotherapy for these parents.

KEY WORDS: Emotional reactions, parents of the diabetes children, post-diagnosis.

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Insulin-dependent diabetes mellitus is the most common metabolic disorder in children. The physiologic and emotional effects of diabetes on patients and their families cause deep changes in their lifestyle. It can be a crisis for the family that cause the imbalance of the family system, increase the tension, and distress the patients and their families.[1] In the United States, 15 out of a hundred thousand children have diabetes.[2] The rate of diabetes incidence in the world is increasing, and it is predicted that the number of diabetes in the world will reach 300 million in 2025 while it was 135 million in 1955.[3] Nelson (2004) stated that in 2010 diabetes would be 40 percent more than 1977.[2]

Diabetes in Iran is in the same rate. In 1998, there were 3 million diabetic patients in Iran and every year 250 thousand add to this number.[4] It is predicted that within next 30 years this number becomes triple. In the province of Isfahan, there is about 100-120 thousand diabetic patients and in the city of Isfahan there are 22-25 thousand diabetic patients and every year 1600-2000 patients add to this number.[4] Unfortunately, there is no precise statistics of the number of Iranian children who have diabetes type I, but the total

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number of children with diabetes type I who have referred to the Diabetes Center of the Isfahan University of Medical Sciences till the end of 2003 is about 1200.[4]

The mothers of diabetic children are under a lot of pressure. They have to adjust themselves and their kids immediately with a disease associated with chronic complications. They have to prepare themselves for the possible complications such as vascular diseases, uremia and even blindness.[2] Therefore, diabetes as an atypical phenomenon may cause emotional reactions in the patients and their parents. Northam et al in 1996 in a cohort study on the parents of diabetes children showed that the children and their parents exhibited mild symptoms of psychological distress but these had largely resolved at 12-month follow-up.[5]

Parents have a key role in the control of diabetes in their children and if the diabetes is not properly controlled, these children will demonstrate more complications and will be more dependent, anxious and depressed; moreover, the proper metabolic control is related to the emotional control and less conflicts in parents.[6] Thernlund et al in 1996 studied the psychological reactions at the onset of insulin-dependent diabetes mellitus in children and later adjustment and metabolic control. They showed that the diabetic children and their mothers were highly distressed at the onset of diagnosis, but their distress became lower ten month later and low general distress in mothers and children were associated with better metabolic control.[7]

Emotional problems may affect the ability and patience to control diet, regulate physical activities, visiting the doctor regularly, and care of other treatment necessities. This can easily lead to lack of cooperation in performing treatment strategies.[8] Koizumi in his study on the response of Japanese mothers to the diagnosis of their diabetic children found that at the onset of diagnosis, mothers became shocked, defensive, isolated and anxious while suffering from depression, weight loss, pain, tiredness. But after a year, they adjusted themselves with the situation.[6] So, mothers may need psychotherapy to make sure that they do not neglect taking care of themselves and their families. Considering different results in different cultures, and because there has been no previous study in Iran about this subject, and also regarding the fact that one of the specific duties of nurses nowadays is prevention of the side effects of diseases especially the emotional problems of diabetic children and their families, the present study aimed to investigate the Iranian mothers' emotional reactions to the diagnosis of diabetes type I in their children.

Methods

This was a prospective and descriptive analytical study. The studied samples were selected who referred to the Diabetes Center of Amin Hospital after the diagnosis of insulin-dependent diabetes in their children by endocrinologist. Sampling method was convenience method and 30 mothers were selected but just 20 of them completed the study. Sampling duration was from October 2001 to March 2003. Data were collected using SCL 90 questionnaire which was consisted of nine various dimensions including somatic, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. Mothers filled the questionnaire in five steps: 0, 1, 3, 6, and 12 months after diagnosis. The questionnaire was composed of two parts; the first one was about demographic characteristics and the second part about emotional reactions. The questions included a 5 range of answers (low or severe) scored 0-4. The data were analyzed using the paired t-test, repeated measure, t-test, Pearson and Spearman correlation and ANOVA in SPSS software.

Inclusion criteria were as follows; parents with just one diabetes type 1 child and no other chronic disease, no recent stressful event (death, divorce,...) during the sampling period, have willing to participate, parents with no chronic or psychological diseases.

Results

Findings showed that the most frequent problems in the mothers at the onset of diabetes diagnosis in their children were depression (17.4%), physical complains (12.85%), anxiety (11.35%), and obsessive-compulsive disorder (9.2%) respectively. After one month of diagnosis, the problems were depression (12%), physical complain (8.9%), obsessive-compulsive (8%) and anxiety (5.2%) respectively. Three month after diagnosis, the problems were depression (9.9%), physical complains (7.65%) and obsessive-compulsive (5.58%). Six month after diagnosis, the problems were respectively depression (7.9%), physical complains (5.15%), obsessive-compulsive (4.75%) and 12 month after diagnosis they were depression (4.6%), physical complains (2.55%) and obsessive-compulsive (2.25%) respectively.

Analysis of Variance with repeated measure showed that the scores were affected by the passing of time and the mean score of mothers' motional reactions reduced over time. It showed that the mothers eventually adjusted with their children disease. Also, the paired t-test and ANOVA showed a significant difference between the mean scores of emotional reactions in various steps (0, 1, 3, 6 and 12 month after the diagnosis) ($p < 0.05$).

Pearson and Spearman correlation coefficient showed that educated mothers had lower frequency of depression, anxiety and paranoid ideation in a year after the diagnosis of diabetes in their children ($p < 0.05$). Interpersonal sensitivity at the onset of diagnosis was higher in mothers who had a diabetes son; and obsessive-compulsive in a year after diagnosis was higher in mothers with a diabetes daughter ($p < 0.05$). Interpersonal sensitivity and paranoid ideation in a year after diagnosis was lower in mothers with a diabetes son ($p < 0.05$). Having more kids and the rank of diabetes kid had an effect on mothers' emotions so that interpersonal sensitivity, paranoid ideation and psychoticism decreased in mothers who had more kids ($p < 0.05$).

Discussion

Findings of the present study showed that the frequency of psychological disorders in mothers decreased after several months of diagnosis of diabetes mellitus in their children.

In a study by Cowax et al in 2004, the results showed that the mothers of diabetic children during the first year after diagnosis were suffering from psychological disorders and this situation had a significant impact on the psychological situation of their diabetes children. Therefore, it is important to help the parents of diabetes children especially mothers to overcome their emotional reactions.[9]

Another study by Rahimi in 1998 showed that the mean of emotional reactions in the parents of diabetes children reduced over time; the parents adjusted with their children disease and had less depression, anxiety, obsessive-compulsive, physical complains, interpersonal sensitivity, phobia, paranoid ideation, hostility and psychoticism.[10]

Meanwhile, researchers suggest that about 85% of the families who have a child with chronic disease adjust themselves with their specific problems. As Rahimi said, Cal and Stiwart studied some patients up to one year from the diagnosis of their disease and found that at the end of the study the patients' depression was reduced from 40% to 18%.[10]

According to the finding of this study, the major problems for mothers at the onset of diagnosis were depression, physical complains, anxiety and obsessive-compulsive and after a year of diagnosis, the mothers adjust themselves with the disease of their children. Therefore, the establishment of counseling centers in the diabetes clinics will be useful to help the parents during the first year after the diagnosis, especially because the mothers' emotional reactions has a significant role in metabolic control as well as psychological situation of diabetes children. In addition, nurses who have a closer relationship with diabetes children and their families can play an important role in this regard.

Since most of diabetic children will be hospitalized at the onset of the diagnosis and the mean of their parents' emotional reaction is higher at that time, it is suggested that the mothers and family of diabetes children receive some psychotherapy during the hospitalization. And it would be great to have a team for that in hospitals.

Our limitation in this study was the number of sample and decreasing them along the study; other studies with more samples could be done to find more about this subject.

The researchers declare that they had no conflict of interest in this study and it was done under the research ethics.

References

1. Piazza-Waggoner C, Modi AC, Powers SW, Williams LB, Dolan LM, Patton SR. Observational assessment of family functioning in families with children who have type 1 diabetes mellitus. J Dev Behav Pediatr 2008; 29(2): 101-5.
2. Behrman RE, Kilegman RM, Jenson HB, Stanton BF. Nelson Text book of pediatric. Philadelphia: W.B. Saunders; 2007. p. 2406.
3. Armstrong N. Research Opportunities in Diabetes. J of cardiovascular nursing 2002; 16(2): 86-94.
4. Jozi, M. Assessment of the effect of massage therapy and relaxation therapy on the level of glycosylated hemoglobin in diabetic children. [Ms Thesis]. Esfahan Faculty of nursing & midwifery, Esfahan medical sciences university. 2002.
5. Northam E, Anderson P, Adler R, Werther G, Warne G. Psychosocial and family functioning in children with insulin-dependent diabetes at diagnosis and one year later. J Pediatr Psychol 1996; 21(5): 699-717.
6. Koizumi S. Japanese mothers' responses to the diagnosis of childhood diabetes. J Pediatr Nurs 1992; 7(2): 154-60.
7. hernlund G, Dahlquist G, Hagglof B, Ivarsson SA, Lernmark B, Ludvigsson J, et al. Psychological reactions at the onset of insulin-dependent diabetes mellitus in children and later adjustment and metabolic control. Acta Paediatr 1996; 85(8): 947-53.
8. Maleki H. How family face the diabetes? Diabetes 2004; 2(5): 25.
9. Kovacs M, Goldston D, Obrosky DS, Bonar LK. Psychiatric disorders in youths with IDDM: rates and risk factors. Diabetes Care 1997; 20(1):36-44.
10. Rahimi M. School of nursing & midwifery. Isfahan: Isfahan University of medical sciences. 1998.