

# Impact of Caring Child with Diabetes Mellitus Type1 upon Mothers at Specialized Center for Endocrinology and Diabetes in Baghdad City

**Khamees Bandar Obaid**

*College of Nursing /University of Baghdad, Dean .College of Nursing / Warith al-Anbiyaa University, Iraq,*

## Abstract

The purposes of the study to assess the impact of caring children with Diabetes Mellitus Type 1 upon mothers. A descriptive study was conducted at Specialized Center for Endocrinology and Diabetes in Baghdad City. To achieve the objectives of the study, a (Convenience) samples of (50) mothers who have children with Diabetes Mellitus Type 1. Data were collected by an application of direct interview as a means of data collection. The results indicated that mothers of diabetic children are experiencing a moderate level of burden regarding care of their children (86.5%), in which they are experiencing a moderate psychological and social burden (61.5% and 51.9%), while they show moderate to high financial burden of care for their children (40%). The study concluded that child with Diabetes Mellitus Type I are experiencing a moderate impact on their mothers .

**Key Words:** *Burden, Caring, Diabetes Mellitus Type1, Mothers*

## Introduction

Type 1 diabetes mellitus one of the most common chronic diseases of childhood, can be diagnosed at any age; peaks in onset occur between 5 years and 7 years of age and at or near puberty. T1DM accounts for ~10% of all diabetes cases, and the incidence rate of childhood T1DM has risen worldwide by ~2.8%–4.0% each year in all age groups in the last several decades. T1DM is most common in Europe (129,000) and North America (108,700) and far less common in People's Republic of China, India, and Africa. <sup>1,2</sup> Iraq is one of the 19 countries and territories of the IDF MENA region. 415 million people have diabetes in the world and more than 35.4 million people in the MENA Region; by 2040 this will rise to 72.1 million. There were 1.2 million cases of diabetes in Iraq in 2015 <sup>1</sup> Type 1 diabetes mellitus is a challenge for children, adolescents and their parents as they need special support to keep it under control. After the diagnosis of T1D, the lifestyle of all family members' changes and this interferes in their quality of life <sup>3</sup>. Mothers were considers the

primary caregivers in most families, and many had to rearrange work schedules or leave work in order to care for their child full-time. Parenting roles also changed dramatically <sup>4,5</sup>. Mothers are ultimately responsible for daily management of T1DM, which has a significant impact on family life. Daily management of T1DM is time-consuming and requires a change to many well-established family routines. Although technological advances have greatly enhanced the ability of parents to monitor and manage T1DM in youth, the responsibility of T1DM management can contribute to parental stress, distress, and diminished quality of life. Understanding the experience of parenting a child with T1DM can provide insight into the challenges and needs of parents <sup>6,7</sup>. Type 1 diabetes mellitus is early age of onset, and a major burden of care on to the family members, especially parents. Parents with psychological morbidity had more dysfunction in social, personal and cognitive domains and also had significantly poorer quality of life in the physical health, psychological health and general well being domains <sup>8</sup>. The diagnosis and treatment of a chronic illness or disability, such as type 1 diabetes, in a child leads to family upheaval and reorganization <sup>9</sup>. The effects of this stress on parents not only may adversely affect parents' mental health but also could affect the health of the child with diabetes. According to family

---

**Corresponding author:**

**Dr. Khamees Bandar Obaid**

Email address: [bkhamees@yahoo.com](mailto:bkhamees@yahoo.com)

systems theory, what happens to a target member of the family affects other family members and their response in turn affects the target family member (10). Moore et al; (2013) and Simsek et al., (2013) reported that 20% to 30% of parents report clinically significant distress, which has been defined as stress (life stress or parenting stress) and symptoms of anxiety, depression, and/or posttraumatic stress.6–8 Parental psychological distress at the time of diagnosis has been found to predict later parental distress(3,11). Parents and particularly mothers of children with T1DM are at increased risk for depression, which was associated with negative effects on parenting, the child's quality of life, and the child's psychosocial adjustment (12).

### Methodology

A descriptive study was conducted at Specialized Center for Endocrinology and Diabetes in Baghdad City. To achieve the objectives of the study, a (Convenience) samples of (50) mothers who have children with Diabetes Mellitus Type 1. In order to assess burden of caring children with Diabetes Mellitus Type 1 upon mothers,

a constructed questionnaire was design and means of an interview technique with the mothers was constructed to measure the variables underlying study. Questionnaire based on comprehensive review of relevant literature and previous studies was also used. These instruments consist of two parts Part one concerned with personal information includes, the demographic data of the mothers, child and child's illness. Part two contained of (25) items concerning burden (psychological, social and economical) of caring children with Diabetes Mellitus Type 1 upon mothers. The questionnaire was answered by one of these answers (always, sometime and never). Constant validity determined for questionnaire through the use of panel experts who are faculty members from College of Nursing. The experts were asked to review the questionnaire for content with clarity. Such changes were employed according to their suggestions and valuable comments. The data collected with constructed questionnaire through an application of direct interview as mean of data collection. Appropriate statistical approach was used

### Results and Discussion

**Table 1: Demographic Characteristics for Mothers**

No.	Characteristics		F	%
1	Age Group:	20 – 29 years	13	25
		30 – 39 years	26	50
		40 – 49 years	12	23.1
		50 ≤ years	1	1.9
		Total	52	100
2	Educational Level:	Doesn't read & write	1	1.9
		Read & write	0	0
		Primary school	19	36.5
		Intermediate school	19	36.5
		Secondary school	5	9.6
		Institute/College	8	15.4

**Cont.... Table 1: Demographic Characteristics for Mothers**

		Total	52	100
3	Marital status:	Married	49	94.2
		Divorced	1	1.9
		Widowed	2	3.8
		Total	52	100
4	family members:	1 – 5	34	65.4
		6 – 10	17	32.7
		11 ≤	1	1.9
		Total	52	100
5	Monthly income:	> 300,000 IqD	19	36.5
		300,000 – 600,000 IqD	21	40.4
		600,000 – 900,000 IqD	9	17.3
		900,000 IqD <	3	5.8
		Total	52	100
6	Occupation:	Housewife	48	92.3
		Governmental employed	3	5.8
		Self-employed	1	1.9
		Total	52	100

The analysis of table (1) shows that half of the mothers are with age group ranged 30 -39 years old (50%), who were graduated from primary and intermediate school (36.5%). The marital status is normal for most of mothers in which 94.2% of them are married. The number of family members reveals that more than half

mothers are living in family composed of 1-5 members (65.4%). Regarding monthly income, 40.4% of mothers are having monthly income of 300,000-600,000 Iraqi dinars per month. The occupational status shows that most of mothers are housewife (92.3%).

**Table 2: Demographic Characteristics of Children with Diabetes Mellitus**

No.	Characteristics		F	%
1	Age:	> 2 years	1	1.9
		2 – 5 years	14	26.9
		6 – 12 years	26	50
		13 – 18 years	11	21.2
		Total	52	100
2	Gender:	Male	30	57.7
		Female	22	42.3
		Total	52	100
3	Birth order:	First	14	26.9
		Second	9	17.3
		Third	14	26.9
		Fourth/+	15	28.8
		Total	52	100
4	Age at diagnosis:	> 2 years	5	9.6
		2 – 5 years	22	42.3
		6 – 12 years	24	46.2
		13 – 18 years	1	1.9
		Total	52	100

This table presents the characteristics of children with diabetes mellitus; the table shows that 26.9% of them are male toddler, preschool children with age group 2-5 years old (57.7%). 28.8% of them are fourth born in the family. More than third of children are diagnosed at school age of 6-12 years (46.2%) and 42.3% of them are diagnosed at preschool age.

**Table 3: Total impact of Care of Children with Diabetes Mellitus on Mothers (N=52)**

Burden	Levels	F	%	M.S	SD
	Low	23	1.9		
Psychological	Moderate	32	61.5	2.35	0.520
	High	19	36.5		
	Low	23	44.2		
Social	Moderate	27	51.9	1.60	0.569
	High	2	3.8		
	Low	10	19.2		
Financial	Moderate	21	40	2.21	0.750
	High	21	40		
	Low	2	3.8		
Total	Moderate	45	86.5	2.06	0.366
	High	5	9.6		

The findings in this table indicate that mothers of diabetic children are experiencing a moderate level of burden regarding care of their children (86.5%), in which they are experiencing a moderate psychological

and social burden (61.5% and 51.9%), while they show moderate to high financial burden of care for their children (40%).

**Table 4: The Relationship between Mothers’ Burdens of Care with Their Children’ Characteristics (N= 52)**

	Burden	Chi-square	d.f	P-Value	Significance
				≤ 0.05	
Characteristics					
Age		4.691	6	0.584	N.S
Gender		0.788	2	0.674	N.S
Birth order		6.810	6	0.339	N.S
Age at diagnosis:		10.668	6	0.099	N.S

d.f: degree of freedom, P: Probability, N.S: Not significant

This table reveals that there is no significant relationship between mothers’ burden of care and characteristics of their children with diabetes mellitus at p-value ≤ 0.05.

**Table 5: The Relationship between Mothers’ Burden of Care with Their Demographic Characteristics (N= 52)**

	Burden	Chi-square	d.f	P-Value	Significance
				≤ 0.05	
Characteristics					
Age group		4.874	6	0.560	N.S
Educational level		13.608	8	0.093	N.S
Marital status		0.495	4	0.974	N.S
Family members		12.796	4	0.012	S
Monthly income		4.287	6	0.638	N.S
Occupation		0.674	4	0.954	N.S

d.f: degree of freedom, P: Probability, N.S: Not significant, S: Significant

This table indicates that there is no significant relationship between mothers' burden of care with their demographic characteristics, except number of family members that shows significant at  $p$ -value  $\leq 0.05$ .

The finding of this study found that half of the mothers are with age grouping ranged 30 -39 years old (50%), who were graduated from primary and intermediate school (36.5%). The marital status is normal for most of mothers in which 94.2% of them are married. The number of family members reveals that more than half mothers are living in family composed of 1-5 members (65.4%). Regarding monthly income, 40.4% of mothers are having monthly income of 300,000-600,000 Iraqi dinars per month. The occupational status shows that most of mothers are housewife (92.3%). characteristics of children with diabetes mellitus described in table that 26.9% of them are male toddler, preschool children with age group 2-5 years old (57.7%). 28.8% of them are fourth born in the family. More than third of children are diagnosed at school age of 6-12 years (46.2%) and 42.3% of them are diagnosed at preschool age. The study found that table (2) demonstrates the findings indicate that mothers of diabetic children are experiencing a moderate level of burden regarding care of their children (86.5%), in which they are experiencing a moderate psychological and social burden (61.5% and 51.9%), while they show moderate to high financial burden of care for their children (40%). Helgeson (2012) agree with this study said that found that caring for a child with diabetes had implications for both parent mental health and the health of the child with diabetes, he found that both were associated with increased parent depressive symptoms and decreased parent life satisfaction <sup>(13)</sup>. Whittemore (2012) reported that prevalence of parental psychological impact ranged from 10% to 74%, with an average of 33.5% of parents reporting distress at diagnosis and 19% of parents reporting distress 1 to 4 years after diagnosis <sup>(6)</sup>. The result of this study contrast with study done by Bhadada (2011) indicates that nearly two-third of parents (64%) had psychological morbidity. Parents with psychological morbidity had more dysfunction in social, personal and cognitive domains and also had significantly poorer quality of life in the physical health <sup>(8)</sup>. Another study focused on Economic burden done by (Shorer et al., 2011; Zysberg and Lang ,2015), concluded that families with lowest incomes bear the highest relative financial burden of diabetes <sup>(14,15)</sup>. Study done by Abolhassani, (2013) indicated that findings of this study provide an insight about effects

of diabetes on the parents' life. Participants' reactions for their children were denial, shock, presentiment and concern, anger, anxiety, and impatience, and crying <sup>(16)</sup>. Hanif and Felimban (1998) concluded in their study that Psychological symptoms shown by mothers such as nervousness, irritability, insomnia, fatigue, poor concentration, fear and indecision, were significantly higher in mothers of diabetic children <sup>(17)</sup>.

## Conclusion

Mothers of children with Type 1 Diabetes Mellitus experience considerable many burden related to the caring of diabetes. Although many mothers find ways to effectively manage this burden, such as developing routines and finding sources of support, others experience clinically significant levels of psychological distress, including symptoms of depression, anxiety, and posttraumatic stress. These symptoms have been shown to have negative effects on parenting, child quality of life. A better understanding of the experience of parenting a child with T1DM may help providers to identify parents at highest risk.

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the College of Nursing /University of Baghdad, Iraq and all experiments were carried out in accordance with approved guidelines.

## References

1. International Diabetes Federation IDF Diabetes Atlas. 15th Edition, International Diabetes Federation, Brussels , (2011).
2. WHO. June 2016. Archived from the original on 26 August 2013. Retrieved 31 July 2016
3. Moore et al; Adolescents with Type 1 Diabetes: parental perceptions of child health and family functioning and their relationship to adolescent metabolic control. Health and Quality of Life Outcomes 2013,11:50 .DOI: 10.1186/1477-7525-11-50
4. Bowes S, Lowes L, Warner J, Gregory JW. Chronic sorrow in parents of children with type 1 diabetes. J Adv Nurs. 2009;65(5):992–1000
5. Suhel Ashraff. The Psychosocial Impact of Diabetes

- in Adolescents: A Review. *Oman Med J.* 2013 May; 28(3): 159– 162.doi:10.5001/omj.2013.46
6. Whittemore R, Jaser S, Guo J, Grey M. A conceptual model of childhood adaptation to type 1 diabetes. *Nurs Outlook* 2010;58 (5):242-51.
  7. Jaser SS, Grey M. A pilot study of observed parenting and adjustment in adolescents with type 1 diabetes and their mothers. *J Pediatr Psychol.* 2010;35(7):738–747.
  8. Bhadada et al; Psychological impact of type-1 diabetes mellitus on parents: an exploratory study from North India .*International Journal of Diabetes in Developing Countries* ,September 2011, 31:174
  9. Patterson J M, Garwick A W. Coping with chronic illness: A family systems perspective on living with diabetes. In: Werther G A, Court J M, editors. *Diabetes and the adolescent.* Melbourne, Australia: Miranova; 1998. p. 3-34.
  10. Cohen M S. Families coping with childhood chronic illness: A research review. *Families, Systems and Health* 1999;17(2):149-164.
  11. Simsek DG, Aycan Z, özen S, et al. Diabetes care, glycemic control, complications, and concomitant autoimmune diseases in children with type 1 diabetes in turkey: a multicenter study. *J Clin Res Pediatr Endocrinol.* 2013;5(1):20–26.
  12. Eckshtain D, Ellis DA, Kolmodin K, Naar-King S. The effects of parental depression and parenting practices on depressive symptoms and metabolic control in urban youth with insulin dependent diabetes. *J Pediatr Psychol.* 2010; 35 (4):426–435.
  13. Helgeson et al; Families with Children with Diabetes: Implications of Parent Stress for Parent and Child Health. *J Pediatr Psychol.* 2012 May; 37(4): 467–478.
  14. Shorer M, David R, Schoenberg-Taz M, Levavi-Lavi I, Phillip M, Meyerovitch J. Role of parenting style in achieving metabolic control in adolescents with type 1 diabetes. *Diabetes Care.* 2011;34(8):1735–1737
  15. Zysberg L, Lang T. Supporting parents of children with type 1 diabetes mellitus: a literature review. *Patient Intelligence* October 2015.7:21-31
  16. Abolhassani Shahla, Sima Babae, and Maryam Eghbali. Mothers’ experience of having children with diabetes. *Iran J Nurs Midwifery Res.* 2013 Jul-Aug; 18(4): 304–309. 1
  17. Muhammad Hanif , Mohammed Felimban. Psychosocial impact on mothers of Saudi diabetic children in Riyadh, Saudi Arabia Article in *Annals of Saudi medicine · Annals of Saudi Medicine*, Vol 18, No 4, 1998.