

Stressors and Coping Patterns of Newly Versus Old Diagnosed Children with Type1 Diabetes Mellitus: An Assessment Study

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Abstract

Background: Children with type₁ diabetes are at a greater risk for emotional and behavioral problems. Children with poorly controlled diabetes are at risk of negative effects on the child's personality, schooling, participation in activities, finally leading to stressors uprising. **Research Design:** A descriptive comparative design was utilized in this study. **Aim:** This study aimed to assess the stressors and coping patterns of newly versus old diagnosed children with type₁ diabetes and to assess factors affecting stressors and coping of newly and old diagnosed children with type₁ diabetes. **Setting:** This study was conducted at Diabetes Outpatient Clinics of Children's Hospitals affiliated to Ain Shams and Tanta universities. **Subjects:** The study involved 200 children aged from birth to 18 years old diagnosed with type₁ diabetes, (57) of them were newly diagnosed since less than 6 months and (143) were old diagnosed children with type₁ diabetes since more than 6 months period. **Tools of data collection:** **1-A questionnaire sheet** to assess children's characteristics, factors affecting stressors, coping patterns and physical, psychological and social stressors affecting the newly and old diagnosed children with type₁ diabetes. **2-Stress scale** to assess the behavior of the diabetic children towards type₁ diabetes. **3-Coping patterns scale** to assess the diabetic children coping patterns towards type₁ diabetes. **Results:** Old diagnosed children had more physical (37.1%), psychological (70.6%) and social stressors (71.3%) compared with newly diagnosed children with type₁ diabetes. Stress level was mild (33.3% and 37.1%) and moderate (22.8% and 24.5%) in both newly and old diagnosed children and both of them were sometimes (42.1% and 43.4%) able to cope with type₁ diabetes. Factors affecting stressors and coping patterns were children age and ranking. There was a significant difference between newly and old diagnosed children related to stressors, stress, coping patterns and their age, ranking and parental discovery of diabetes. **Conclusion:** Old diagnosed children with type₁ diabetes had physical, psychological and social stressors more than newly diagnosed children and both of them were sometimes able to cope with type₁ diabetes. Factors affecting stressors and coping patterns of newly and old diagnosed children with type₁ diabetes were child's age, ranking and parental discovery of type₁ diabetes. **Recommendations:** Designing and carrying out programs to support newly, old diagnosed children and their parents to cope with type₁ diabetes and minimize their physical, psychological and social stressors.

Key words: [Type₁ diabetes mellitus](#), [Stressors](#), Coping patterns, [Newly](#) versus old diagnosed children, Nursing.

Introduction

Type 1 diabetes is a chronic disease which affects nearly 15 million children worldwide, and whose prevalence is

increasing throughout the world. It is a life long situation that invades the lives of children and its management imposes a huge responsibility on children and their parents,

especially in young children (**Oskouie et al., 2013**).

The prevalence of type 1 diabetes is growing globally. In Europe, there are 70,000 newly diagnosed children every year (**International Diabetes Federation, 2011**). Approximately 1.4 million American children are diagnosed with diabetes every year. Type 1 diabetes remained the 7th leading cause of death in the United States in 2010 (**American Diabetes Association, 2015**). While in Egypt, it accounts for about 8/100,000 children per year (**El- Ziny et al., 2014**).

The diagnosis of a chronic illness or disability such as type 1 diabetes in a child leads to uprising stressors, family disturbance and reorganization. This stress can affect negatively the health of the child (**Helgeson et al., 2012**). Failure to achieve and maintain good glycemic control in children can lead to diabetes-related complications. Children with type 1 diabetes can experience stressors and impairment in cognitive functions such as memory and attention (**Pourabbasiet al., 2016**).

Stress can be a very real problem that needs recognition. There are 'top ten' lists of things that are stressful as the death of someone close, moving house or divorce. Children with type 1 diabetes are just as likely to suffer stressful situations as other children. In addition, diabetes, its diagnosis and complications are stressful events for children, parents and siblings (**Leonard, 2013**).

Coping is the capacity to respond and to recover from something stressful as a disaster. Coping strategies or mechanisms are remedial actions undertaken by children whose survival and lives are threatened. Coping strategies vary by age, gender, region, community, social group, household, season and time in history (**World Health Organization, 2010**).

Children with type 1 diabetes should be offered an ongoing integrated package of care by a multidisciplinary pediatric diabetes care team with the required competencies. Pediatric diabetes specialist nurses are at the core of teams who provide expert care to children with type 1 diabetes. The specific needs of these children can be met by a nurse who has extended skills in pediatric diabetes care as an educator, counselor, manager, researcher, communicator and innovator (**Von et al., 2012**).

Significance of the study:

The number of studies about stressors in children with chronic diseases, and studies on stressors in children with type 1 diabetes are very few in number, most of which are about stressors in parents of the diabetic children. Traumatic life events especially hypoglycemia in children with type 1 diabetes has been ignored both in research area and in clinical practice, which mainly led to stressors uprising. Consequently, it's crucial to study the stressors of newly and old diagnosed children suffering from type 1 diabetes and assess the factors affecting their stressors and coping patterns (**Şişmanlaret al., 2012**).

Subjects and Methods

Study design:

A descriptive comparative research design was utilized in the current study.

Research Setting:

This study was conducted at the diabetes outpatient clinics of children's hospitals affiliated to Ain Shams and Tanta universities.

Sample Size and characteristics:

The study sample was composed of two hundred children suffering from type₁

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diabetes attending the previously mentioned settings regardless their characteristics. Selection of these children was based on the statistical annual follow up records of the diabetic children in diabetic outpatient clinics of children's hospitals affiliated to Ain shams (860) and Tanta (940) universities. They were classified into two groups: newly diagnosed children (57) who were diagnosed with type₁ diabetes since less than 6 months' period and old diagnosed children (143) who were diagnosed with type₁ diabetes since more than 6 months. Stressors of children aged between one and less than six years old were reported by their accompanied parents.

Sample criteria:

Subjects of the study will include all available children who are attending to the previously mentioned setting after fulfilling the following criteria:

- 1- Confirmed diagnosis of type₁ diabetes
- 2- Attendance to the outpatient clinic.

Sample type:

A purposive sample was selected based on the previous mentioned criteria.

Tools of data collection:

Data were collected through using the following tools:

A- Structured questionnaire sheet:

It was designed in a simple Arabic language by the researcher after reviewing relevant literature and was revised by the thesis supervisors to suit the level of understanding of the studied children. The aim of the questionnaire was to assess children's knowledge about type₁ diabetes, their stress, stressors, coping patterns and factors affecting stressors and coping patterns of newly versus old diagnosed children with

type₁ diabetes. It consisted of the following parts:

Part 1:-It was concerned with the characteristics of newly and old diagnosed children with type₁diabetes (name, age, gender, child's order, educational level, child's present health status, duration of illness and frequency of hospital admissions).

Part 2:-Concerned with the factors that affect It was concerned with the factors that affected stressors and coping patterns of newly and old diagnosed children with type₁diabetes (knowledge about type₁ diabetes, onset of illness, presence of diabetes-related complications, follow up, insulin therapy, nutrition, exercise, BG monitoring and self-care practice).

N.B.: The scoring system of $\geq 75\%$ referred to satisfactory knowledge related to type₁ diabetes and $<75\%$ referred to unsatisfactory knowledge related to type 1 diabetes.

Part 3:-It was concerned with the physical, psychological and social stressors that affected newly and old diagnosed children with type₁diabetes.

B- Rating scales:-

1- Stress scale (Habib, 1996):-

This scale was used to assess stress levels of newly and old diagnosed children toward type₁ diabetes. It was adopted and translated into simple Arabic language by the researcher to suit the nature of the study. The scale contained 31 statements which focused on the behavior of the children towards type₁ diabetes. It was asked from each child to put (√) in the space that explained his or her degree of agreement either unsure (0), completely agree (1), agree (2), disagree (3) or completely disagree (4).

Scoring system:

The scoring system of zero referred to unsure, from 1 to 31 referred to no stress, from 32 to 63 referred to mild stress, from 64 to 95 referred to moderate stress and from 96 to 124 referred to severe stress.

2-Coping Patterns Scale (Jalowiec and Powers, 1991):-

This scale was used to assess newly and old diagnosed children's coping patterns towards type₁ diabetes. It was adopted and translated into simple Arabic language by the researcher to suit the nature of the study. The coping patterns scale is a three-points scale according to the degree of coping. The numerical values were allotted to each response: always, sometimes, and never. It contained (28) statements. Measuring the scores of coping patterns of newly and old diagnosed children towards type₁ diabetes was done by determining whether the item was positive or negative, then the following scores were used; (2) points for always able to cope, (1) point for sometimes able to cope, (zero) point for never able to cope, and accordingly newly and old diagnosed children coping patterns were categorized into either never able to cope (score < 28), sometimes able to cope (28: < 56) or always able to cope (56).

Preparatory phase:

Tools of data collection were designed, developed and adopted by the researcher based on the literature of review under the supervision of experts in the field of pediatric nursing. A review of the past and current related literature covering all aspects of type₁ diabetes, stressors and coping patterns of children suffering from type₁ diabetes using available books, journals, articles, magazines and the internet was done to be acquainted with the various aspects of the research problem in order to develop the study tools.

Pilot Study:

A pilot study was carried out, involving 10% (20 children) suffering from type₁ diabetes and they were excluded from the study sample later to test the validity and feasibility of the study tools in terms of its content and time needed to fill it. The necessary modifications were carried out as revealed from the pilot study.

Ethical consideration:

A verbal approval was obtained from newly and old diagnosed children with type₁ diabetes or their accompanied parents before their inclusion in the study; a clear and simple explanation of the aim of the study was given according to their level of understanding. Children and their accompanied parents were assured that all the gathered data will be treated confidentially and would be used for research purpose only. They were also informed about their right to withdraw from the study at any time without giving any reasons.

Fieldwork:

The actual field work was carried out for 6 months from the first of November 2014 till the end of April 2015. The researcher was available two days per week, one day (Tuesday) at the diabetes outpatient clinic of children's hospital affiliated to Ain Shams university, and one day (Thursday) at the diabetes outpatient clinic of children's hospital affiliated to Tanta university, from 9.00 AM to 12.00 PM. The researcher interviewed newly and old diagnosed children with type₁ diabetes and their accompanied parent to assess their stressors and coping patterns. The average time needed for the completion of the study tools was approximately 30-40 minutes.

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Administrative design:

An official approval to carry out the study was obtained by the submission of an official letter issued from the Dean of the Faculty of Nursing, Ain Shams University to the directors of both the pediatric hospitals of Ain Shams University (diabetic outpatient clinics) and Tanta University.

Results:

Table (1): Showed that more than three fourths (75.4%) of the newly diagnosed children were girls while nearly two thirds (65.7%) of the old diagnosed children were boys. The mean age of the newly diagnosed children with type₁ diabetes was 7.54 ± 1.86 , while the mean age of old diagnosed children in the current study was 12.3 ± 2.46 . As regards educational level, it was found that, more than half (57.9%) and one third (37.1%) of both newly and old diagnosed children with type₁ diabetes were respectively in primary school and 49.1%, 50.3% of both newly and old diagnosed children with type₁ diabetes were ranked as the first in their families respectively. There was a significant difference between newly and old diagnosed children with type₁ diabetes in gender, age and level of education.

Table (2): Revealed that 40.4% of newly diagnosed children and their parents have satisfactory knowledge regarding type₁ diabetes compared with 22.4% of old diagnosed children. There is a significant difference between newly and old diagnosed children with type₁ diabetes and their parents as regards to total knowledge about type₁ diabetes with ($\chi^2 = 6.603$) and (P-value = 0.010). As regards the presence of physical stressors

figure (1): showed that old diagnosed children with type₁ diabetes had more physical stressors (37.1%) compared with

newly diagnosed children with type₁ diabetes (36.8%).

As regards the presence of psychological stressors,

Figure (2): Old diagnosed children with type₁ diabetes had more psychological stressors (70.6%) compared with newly diagnosed children with type₁ diabetes (70.2%).

As regards social stressors, the findings showed that Old diagnosed children with type₁ diabetes had more social stressors (71.3%) compared with newly diagnosed children with type₁ diabetes (68.4%) According to stress level related to diagnosis of type₁ diabetes).

Figure (3): showed that was stress level mild (37.1% and 33.3%) and moderate (22.8% and 24.5%) in both newly and old diagnosed children respectively but it was more common in old diagnosed children. According to their coping pattern,

Figure (4): showed that both newly and old diagnosed children were sometimes able to cope with type₁ diabetes (42.1% and 43.4%) but old diagnosed children had more ability to cope(35.7%).

As regards to relation between stressors of newly versus old diagnosed children with type₁ diabetes according to their age, **table (3):** showed that there was a statistically significant difference between newly and old diagnosed children aged from 12 to ≤ 18 years old related to physical, psychological and social stressors resulting from diagnosis with type₁ diabetes and their age.

As regards to relation between stress & coping pattern domains of newly versus old diagnosed children with type₁ diabetes according to their age.

table (4): showed that there was a statistically significant difference between

newly and old diagnosed children aged from 12 to ≤18 years related to stress, coping patterns and their age.

Part I: Characteristics of newly versus old diagnosed children with type₁ diabetes

Table (1): Number and percentage distribution of newly versus old diagnosed children with type₁ diabetes according to their characteristics (n= 200).

Characteristics of newly versus old diagnosed children with type ₁ diabetes		New n= 57		Old n= 143		Test of significance	
		N	%	N	%	χ^2	P-value
Gender	Boys	14	24.6	94	65.7	27.813	<0.001*
	Girls	43	75.4	49	34.3		
Age (years)	1-< 6	11	19.3	20	14	26.209	<0.001*
	6-<12	35	61.4	55	38.5		
	12-≤18	11	19.3	68	47.6		
Mean ± SD		7.54±1.86				12.3±2.46	
Level of education	Nursery school	8	14	14	9.8	12.410	0.015*
	Primary school	33	57.9	53	37.1		
	Preparatory school	8	14	33	23.1		
	Secondary school	8	14	31	21.7		
	Uneducated	0	0.0	12	8.4		
Ranking	First	28	49.1	72	50.3	2.758	0.599
	Second	19	33.3	38	26.6		
	Third	3	5.3	18	12.6		
	Fourth	6	10.5	14	9.8		
	The only one	1	1.7	1	0.7		

Part II: Factors affecting stressors and coping patterns of newly versus old diagnosed children with type₁ diabetes

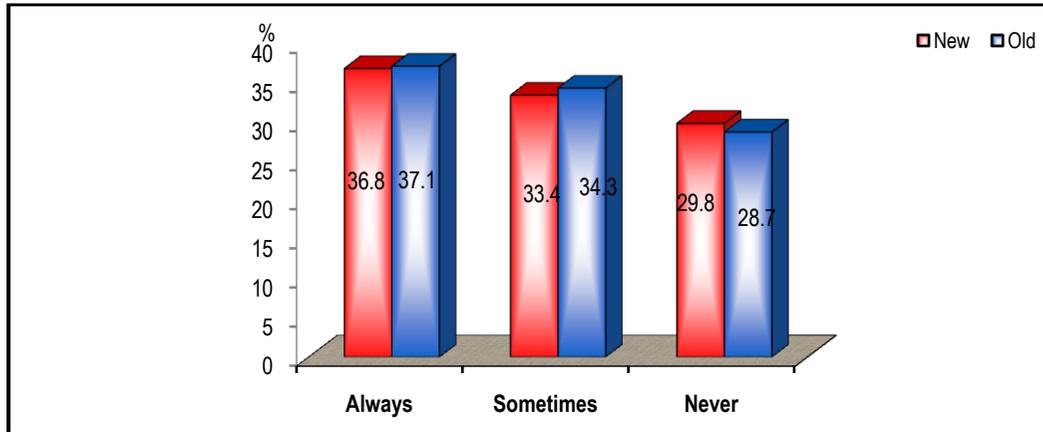
Table (2): Number and percentage distribution of newly versus old diagnosed children with type₁ diabetes (and their accompanied parent) according to total knowledge about type₁ diabetes(n= 200).

Newly and old diagnosed children Total knowledge	New n= 57		Old n= 143		Test of significance	
	N	%	N	%	χ^2	P-value
Satisfactory	23	40.4	32	22.4	6.603	0.010*
Unsatisfactory	34	59.6	111	77.6		

Part III: Physical, psychological, social stressors, stress level and coping patterns scale of newly versus old diagnosed children with type₁ diabetes.

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Figure (1): Percentage distribution of newly versus old diagnosed children with type₁ diabetes according to presence of physical stressors related to type₁diabetes mellitus (n= 200).



Physical Stressors

Figure (2):Percentage distribution of newly versus old diagnosed children with type₁diabetes according to presence of psychological and social stressors (n= 200).

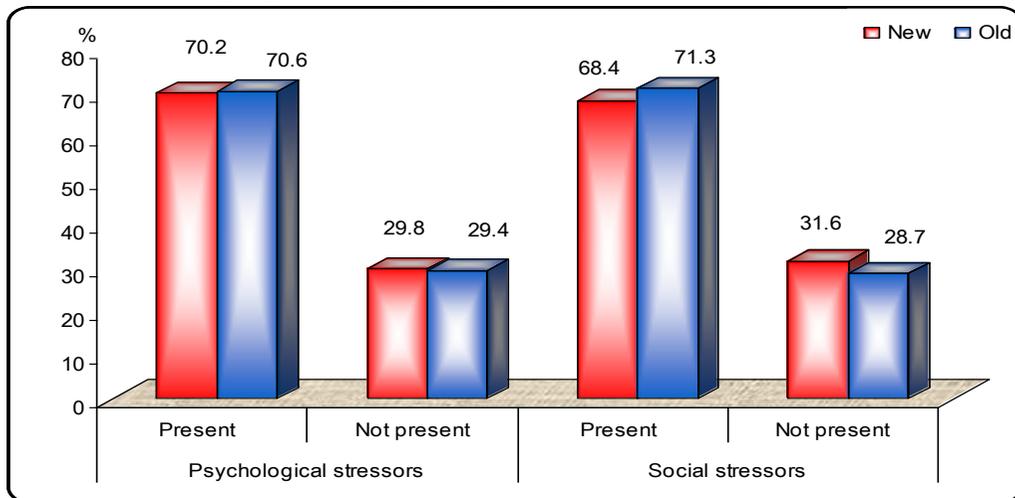


Figure (3):Percentage distribution of newly versus old diagnosed children with type₁ diabetes according to their level of stress (n= 200).

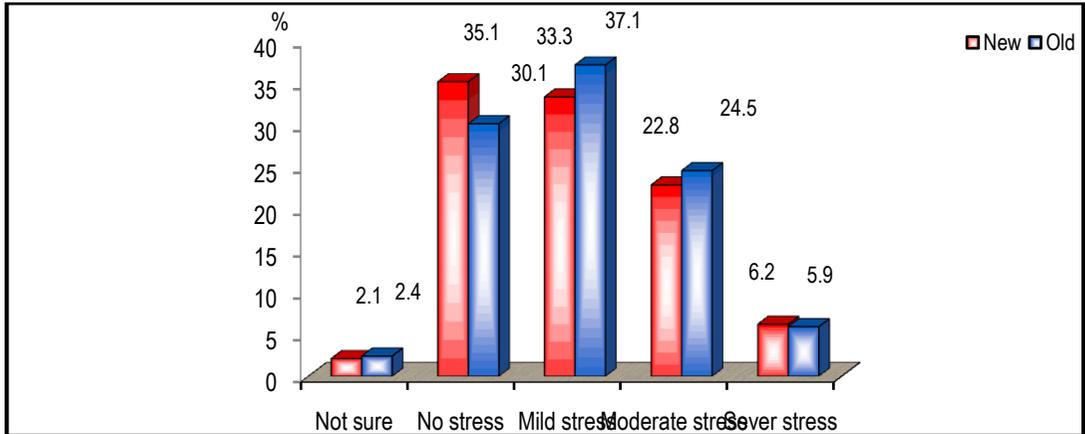


Figure (4):Percentage distribution of newly versus old diagnosed children with type₁ diabetes according to their coping patterns (n= 200).

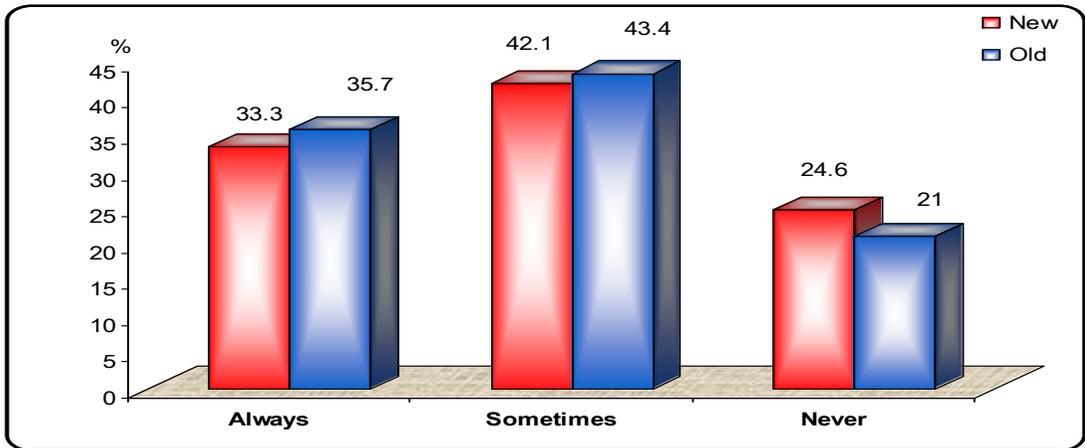


Table (3): Relation between stressors of newly versus old diagnosed children with type₁ diabetes according to their age (n= 200).

Stressors	Age in years	New n= 57				Old n= 143				t-test	
		N	Mean	±	SD	N	Mean	±	SD	t	P-value
Physical stressors	1-<6	11	16.27	±	7.21	20	19.2	±	8.95	0.929	0.36
	6-<12	35	17.83	±	5.52	55	15.91	±	8.2	1.219	0.226
	12-≤18	11	12.67	±	8.41	68	21.24	±	7.06	2.807	0.006*
Psychological stressors	1-<6	11	9.09	±	5.52	20	10.15	±	4.75	0.561	0.579
	6-<12	35	11.4	±	5.9	55	10.22	±	5.27	0.989	0.325
	12-≤18	11	6.33	±	3.88	68	13.58	±	4.02	4.236	<0.001*
Social stressors	1-<6	11	9	±	3.29	20	9.25	±	4.83	0.153	0.88
	6-<12	35	8.94	±	4.42	55	6.55	±	4.2	2.588	0.011*
	12-≤18	11	8.83	±	2.99	68	11.52	±	2.54	2.445	0.017*

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Table (4): Relation between stress & coping pattern domains of newly versus old diagnosed children with type₁ diabetes according to their age (n= 200).

Stress / Coping patterns	Age in years	New n= 57			Old n= 143			t-test	
		N	Mean	± SD	N	Mean	± SD	t	P-value
Domain of stress	1-<6	11	74.73	± 10.8	20	71.85	± 13.09	0.621	0.54
	6-<12	35	64.31	± 18.31	55	71.91	± 11.77	2.398	0.019*
	12-≤18	11	66	± 16.72	68	50.88	± 16.1	2.196	0.031*
Domain of coping pattern	1-<6	11	23.73	± 5.08	20	29	± 8.86	1.809	0.081
	6-<12	35	29.43	± 10.86	55	30.69	± 7.88	0.638	0.525
	12-≤18	11	24.83	± 6.4	68	33.97	± 7.95	2.731	0.008*

Discussion

The current study revealed that more than three fourths of the newly diagnosed children were girls, while nearly two thirds of old diagnosed children were boys (table1). This finding was in an accordance with (Onyiriuka and I febi, 2013) and (Reddy et al., 2013) who mentioned in a study entitled “Characteristics of newly diagnosed children with type 1 diabetes” that there was an overall female predominance in the newly diagnosed children with type₁ diabetes where male-to-female ratio was 1:1.5.

The findings of the current study showed that the mean age of newly diagnosed children was 7.54±1.86 (table 1). This finding was in contradiction with (Tamunopriye and Iroto, 2015) who mentioned in a similar study entitled “Epidemiology of type₁ diabetes and diabetic children characteristics in United Kingdom” that the mean age of children at diagnosis with type₁ diabetes was 10.55± 4.03. On the other hand, the mean age of old diagnosed children with type₁ diabetes in the current study was 12.3± 2.46. This finding was supported by (Sismanlar et al., 2012), who mentioned that the mean age was calculated as 13.67±2.39 in a study which was entitled “Posttraumatic stress symptoms in children

diagnosed with type 1 diabetes from more than one year”.

As regards the educational level, the current study revealed that more than half of newly diagnosed children and more than one third of old diagnosed children were in primary schools respectively (table 1). This result was in an accordance with (Grey, 2011), who found that half of the children included in the study entitled “Intervention and screening for diabetic children” were at primary schools. From the researcher’s point of view, this similarity in the findings may be due to the fact that the study subjects were in the same age group, and accordingly were admitted to the same educational stage in different settings.

As regards child ranking, the current study revealed that nearly half of both newly and old diagnosed children with type₁diabetes were ranked as the first children in their families, and there was a significant difference between newly and old diagnosed children in gender, age and educational level (table 1). These findings were contrary to those of (Kyvik et al., 2013), who found in a study entitled “The epidemiology of type₁ diabetes mellitus” that children were ranked between the first and the second in their families, and no significant differences were evident regarding the gender and age among children

diagnosed with type₁ diabetes before the age of 15 years old.

Regarding the knowledge of newly and old diagnosed children and their accompanied parents about type₁ diabetes, the current study reflected that the newly diagnosed children had more knowledge about type₁ diabetes compared with old diagnosed children (table 2). These results agreed with ([Borchers et al., 2010](#)) who mentioned in a study which was entitled "Being hospitalized with a newly diagnosed chronic illness" that the old diagnosed children with type₁ diabetes seemed to be less competent in a relationship with their environment and illness because they didn't have enough knowledge about type₁ diabetes. On the other hand, newly diagnosed children appeared to desire involvement in their illness; also, at the same time, they preferred to share responsibility with or hand over responsibility to the caregivers. From the researcher's point of view, newly diagnosed children had more knowledge about type₁ diabetes because they were keen on knowing more and more about their illness.

Regarding physical stressors related to type₁ diabetes, the current study revealed that old diagnosed children always had more physical stressors compared with newly diagnosed ones (figure, 1). This was contrary to the findings of ([Mitchell et al., 2010](#)) and ([Talakoub and Nasiri, 2012](#)), who mentioned in a study which was entitled "Stress among fathers of young children with type 1 diabetes and their children" that the major problems of the studied subjects at early stages of child's diabetes diagnosis in newly diagnosed children were physical complaints that lasted for the later three months, followed by decreased emotional responses, which indicated the acceptance of disease over time. However, the current study's results were agreed with ([Anderson et al., 2010](#)) who stated in a study which was entitled "Family characteristics of diabetic adolescents" that adolescents diagnosed with type₁ diabetes

from more than one year had physical stressors and poor diabetes control, and believed that the disease negatively affected their personality, physical well-being, schooling and participation in activities. In the researcher's opinion, the old diagnosed children had more physical stressors because they lived with type₁ diabetes for longer time leading to arise of physical stressors and complaints such as tiredness and weight loss.

Regarding the psychological stressors related to diagnosis of type₁ diabetes, the current study revealed that more than two thirds of both newly and old diagnosed children with type₁ diabetes suffered from psychological stressors (figure, 2). This result is highly supported by ([Koizumi, 2010](#)) and ([Nematpour and Shahbazian, 2012](#)), who mentioned in a study entitled "Responses of Japanese mothers to their children's diabetes diagnosis" and "Psychological aspects of children and their mothers after one year from diagnosis of type₁ diabetes" that more than half of the diabetic children suffered from psychological stressors, demonstrated feelings of shock, defense and isolation at the first stages of diabetes diagnosis. From the researcher's point of view, psychological stressors arise in the diabetic children because of the heartbreaking unexpected event of diagnosis with type₁ diabetes and comparing themselves with the normal children as they bear the diabetic management burden.

Regarding social stressors related to diagnosis of type₁ diabetes, the current study revealed that old diagnosed children suffered from social stressors more than the newly diagnosed ones (figure, 2). This was contradicted by ([Streisand et al., 2011](#)) and ([Roemer et al., 2013](#)) who mentioned in a study entitled "Pediatric parenting stress among parents of children with type₁ diabetes" that during acute diabetes in the newly diagnosed children, responsibility of diabetes management, fear of experiencing high or low blood glucose symptoms in the presence of child peers increased social

stress, isolation and a feeling of loneliness. These stresses inflicted hindrances in the way of children's performance regarding social, psychological and family areas. However, the researcher's findings were in an agreement with **(Davidson et al., 2014)** who mentioned in a study entitled "Stressors and self-care challenges faced by adolescents living with type₁ diabetes" that the adolescents with type₁ diabetes diagnosed from more than one year faced a number of stressors as the impact of diabetes on social interactions with family members, peers and teachers as well as the interference of symptoms such as hypoglycemia with the daily activities. From the researcher's point of view, the limitation in the diabetic child's activity with his peers was to maintain his blood glucose level near normal, so as to avoid complications leading to isolation and difficulty in making friendships and subsequently, social stressors.

Findings of the current study indicated that the level of stress among newly and old diagnosed children with type₁ diabetes was mild and moderate (figure 3). This was incongruent with **(Horsch et al., 2014)** in a study entitled "PTSS in old diagnosed with type₁ diabetes" which determined that less than one third of the old diagnosed children reported stress related to diagnosis and care of type₁ diabetes to be severe or very severe, and more than half reported stress at moderate levels or above. Comparing two studies, the researcher thinks that the discrepancy in prevalence rates of stress might have been due to the methodological differences, and that children who have lived with type₁ diabetes for longer period might have experienced more negative life events. This current study's results were highly supported with **(Landolt et al., 2012)** who found in a study entitled "The mutual prospective influence of child and parental post-traumatic stress symptoms in pediatric patients" that nearly one third of the newly diagnosed children with type₁ diabetes expressed moderate levels of stress related to diagnosis with type₁ diabetes.

Findings of the current study about domain of coping patterns elicited that more than two thirds of old diagnosed children with type₁ diabetes were always and sometimes able to cope more than the newly diagnosed ones (figure 4). This was supported by **(Van et al., 2013)** in a study which was entitled "Coping skills training for parents of children with type₁ diabetes" which presented that the newly diagnosed children had less metabolic control so their coping strategies were less than the old diagnosed ones. On the other hand, current study results were contrary to those of **(Graue et al., 2014)** in a study entitled "The coping styles of adolescents with type 1 diabetes" that mentioned that old diagnosed children with type₁ diabetes diagnosed for more than seven years had aggressive coping and lower use of active coping. In the researcher's opinion, the coping with type₁ diabetes in newly diagnosed children needs a long period of time because the disease management has a lot of limitations in the daily life like the compliance with the insulin injections, healthy diet and physical activities with precaution.

The present study indicated that there was statistically significant difference ($P < 0.05$) between newly and old diagnosed children with type₁ diabetes aged from 12 to ≤ 18 years old related to stressors, stress level, coping patterns and their age (tables 3&4). This was agreed with **(Haugstvedt et al., 2011)** in a study entitled "Psychosocial family factors and glycemic control among children aged 1-15 years with type₁ diabetes" which stated that there was highly significant difference between stressors and coping patterns of the newly versus old diagnosed children regarding their age. This significant difference may have been due to higher child's age which was significantly associated with higher HbA1c, especially during the adolescence stage due to over-activity.

Conclusion

The current study concluded that old diagnosed children with type₁ diabetes had physical, psychological and social stressors more than newly diagnosed children, and both of them were sometimes able to cope with type₁ diabetes. Factors affecting stressors and coping patterns of newly and old diagnosed children with type₁ diabetes were child's age, ranking and parental discovery of type₁ diabetes.

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