PERCEIVED STRESS AND SELF-CARE ACTIVITY AMONG ADOLESCENTS WITH TYP1 DIABETES

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Abstract

Teens with type 1 diabetes encounter particular difficulties in managing their illness because they have to juggle the responsibilities of controlling their diabetes on a daily basis with the usual obstacles of puberty, including peer pressure, stress from school, and emotional shifts. Being diagnosed with type 1 diabetes is a chronic illness that calls for regular blood glucose testing, adherence to an insulin regimen, and maintenance of a nutritious diet and exercise schedule. The term "perceived stress" describes how someone feels about the demands made on them and how well they are able to handle them. Managing a chronic health condition like type 1 diabetes, family conflicts, social interactions, and academic pressures are just a few of the many reasons that can lead to stress. According to research, teenagers with type 1 diabetes deal with stress at a higher rate than their counterparts without the disease. The ongoing need for self-care, anxiety about hypo- or hyperglycemia, worries about long-term problems, and the effect of diabetes on everyday activities and social relationships are all contributing factors to this heightened stress. High levels of perceived stress have been associated with poor glycemic control, an increased risk of complications from diabetes, and a lower quality of life in people with type 1 diabetes. Stress can also have an impact on self-care practices since it can make it difficult for people to prioritize their diabetes care when they are dealing with conflicting demands and emotional distress.

Objective:
*   Determining the level of Perceived stress among adolescents with type 1 diabetes.
*   Determining the level of self-care activities among adolescents with type 1 diabetes Relation.
*   Finding the relationship between Perceived stress and self-care activities.

Materials and Methods: descriptive study conducted in Al-Nasiriyah city's The Specialized Center of Endocrinology Diseases and Diabetes Mellitus. The research was carried out in April 2023. Information gathered from interviewing teenagers to provide responses on the study's questionnaire The perceived stress scale and the general self-care activities questionnaire.

Results: In this study, 220 adolescents with type 1 diabetes, ages 11 to 19, were included. The adolescents reported low levels of self-care activities and moderate levels of perceived stress. The relationship between perceived stress and self-care activities was found to be significantly inverse.

Conclusions: According to the study, enhancing teenagers with type 1 diabetes's engagement in self-care activities requires addressing their perceived stress. Healthcare professionals can assist teenagers in better managing their conditions and improving their overall health outcomes by putting focused interventions into practice and offering tailored.

KEYWORDS: Typ1 diabetes, Perceived stress, Self-care activity, Adolescents

Introduction

The primary kind of diabetes mellitus that results from autoimmune damage of the pancreas, which prevents it from secreting insulin, is known as type 1 diabetes mellitus (T1DM) [1]. The number of persons with diabetes is expected to rise from 642 million in 2040 to become the seventh most common cause of death by 2030. It takes a lifetime of care to keep diabetes under control [2]. Diabetes is a difficult disease[2]. Countries differ greatly in their incidence of type 1 diabetes mellitus; Finland has the highest recorded incidence (52.8 per 100,000 people), while China and Venezuela have the lowest incidence (0.1 per 100,000 people). According to estimates, there are 79,000 cases of type 1 diabetes mellitus worldwide each year, with 500,000 cases occurring in children under the age of 15 [3]. Adolescents with diabetes have a demanding treatment routine that includes frequent requirements such as measuring carbs, tracking glucose, and administering medicine. [4] An important time in a person's growth is adolescence.

Numerous developmental processes are taking place at this period, including those related to the body, mind, emotions, identity, and society. Having a chronic illness may make this time more difficult. People with type 1 diabetes have to follow an exacting, labor-intensive, daily regimen[5]. These lengthy therapies cause psychosocial and emotional problems for diabetic patients, such as anxiety about complications, dread of hypoglycemia, exhaustion from poorly managed blood glucose, and feelings of worthlessness. [6]. Individuals with diabetes and other chronic illnesses frequently fight their entire lives to incorporate ever-changing lifestyle guidelines and treatment plans into their everyday routines. People who with diabetes now have additional duties, obligations, and stress to deal with [7]. The degree to which an individual believes that the demands of life are greater than their capacity for handling them is known as perceived stress. Numerous research conducted in the US, China, and the Netherlands have shown that adolescents with type 1 diabetes have poorer diabetic self-management when

they feel a high degree of stress [8]. Understanding stress-related health effects and prevention in children requires identifying stressors, stressful events, and children's experience of stress [9].

Materials and Methods

Study design: Descriptive study.

Study setting: The study was conducted at The Specialized Center of Endocrinology Diseases and Diabetes Mellitus in Al-Nasiriyah city to obtain comprehensive and dependable data.

Study sampling: There are approximately (2000) adolescent patients registered at The Specialized Center of Endocrinology Diseases and Diabetes Mellitus for treatment, care, and follow-up. A non-probability (convenience) sampling technique is designated to obtain data as accurate as possible. The sample size is (220) patients.

- To select a representative sample size for the study population, the Steven Thompson equation was used to calculate the sample size of the population with a known number at a confidence level of 95% (or a significance level of 0.95) and a standard deviation of 0.5.

- After applying the equation, the sample size found to be 220 adolescent.

Instrument of study: Three components make up the tool:

Part I: Including items related demographic data: age, sex, educational levels, economic status.

Part II: The Chinese version of the Perceived Stress scale [10]

Part III: diabetes self-care activity questionnaire

Ethical Approval: Prior to data collection, the study was carried out in accordance with the ethical approval, theme information, June 26, 2023 permission form, and study protocol, all of which were reviewed and approved by the domestic committee of the nursing college.

Results

The results of the data analysis presented systematically in tables and are in accordance to selected study objectives:

Table1: Distribution of the sample according to their demographic characteristics:

Variables		N= 220	
		F	%
Age (Years)	11-13 Years	66	30.0
	14-16 Years	132	60.0
	17-19 Years	22	10.0
Total		220	100
Sex	Male	77	35.0
	Female	143	65.0
Total		220	100
Educational levels	Illiterate	1	0.5
	read and write	21	9.5
	Elementary school	58	26.4
	Intermediate school	140	63.6
Total		220	100
Family Monthly income	Below 500000 IQD	110	50.0
	500000 to 999999 IQD	88	40.0
	1000000 to 1999999 IQD	22	10.0
Total		220	100

F= Frequency; %= Percent.

Table 1 demonstrates that the majority of teens (60.0%) belonged to the 14–16 age group. In terms of sex, 65.0% of adolescents were female. Based on their educational levels, 63.0% of the teenagers were enrolled in intermediate school. 50.0% of the families in the study earned less than 500,000 IQD each month.

Table 2: levels of Perceived stress among adolescents with typ1 diabetes:

	Rating	f	%	M.S	Level
Perceived stress	Low	91	41.4	1.92	Moderate
	Moderate	56	25.5		
	High	73	33.2		
	Total	220	100.00		

M.S= mean of score (1-1.66 low, 1.67-2.33 moderate, 2.34-3 high)

Table 1 demonstrates that adolescents with type 1 diabetes had moderate levels of perceived stress overall.

Table 3: levels of self-care activity adolescents with typ1 diabetes:

	Rating	f	%	M.S	Level
Self-care activity	Low	133	60.5	1.57	Low
	Moderate	48	21.8		
	High	39	17.7		
	Total	220	100.00		

F= Frequency; %= Percent; m.s=mean of score(1-1.66 low, 1.67-2.33 moderate, 2.34-3 high)

This table demonstrates that adolescents with type 1 diabetes have low levels of overall self-care activity.

Table 4: linear regression analysis of correlates of Perceived stress and diabetes self-care activity in participants with type 1 diabetes.

	Diabetes self-care activity			
	R^2	β	P.V	Sig
Perceived stress	.623	-.790-	.001	S

According to this table, the study's findings demonstrate a statistically significant negative link (p-value < 0.05) between perceived stress and diabetes self-care activities.

Discussion:

The Demographic Data of the Distributed Sample:

Finding an overview of the current study and the samples' demographic characteristics revealed that, of the study's total participants, 60.0% were between the ages of 14 and 16. The average age of adolescents at the Holy City of Karbala, Iraq, was determined to be 12.11 years, which is in line with the findings of a research conducted there [11].

The current study's findings showed that 143 teenagers, or more than half, were female (65%). This finding was consistent with an Iraqi study on type 1 diabetes in adolescence, which found that 28 (87.5%) of the participants were female[12].

According to the study's findings, more than half of the teenagers who were the subject of the inquiry were enrolled in intermediate school. The majority of the teens under observation were enrolled in intermediate school, according to a study on type 1 diabetes and its management among Saudi children and

adolescents, which was in line with the findings of this investigation. [13].

Based on an analysis of the current study, the demographic parameters of the samples revealed that 40.0% of the participants had monthly salaries ranging from 500000 IQD to 999999 IQD. These findings are consistent with a study conducted in two tertiary facilities in Jeddah, Saudi Arabia, on the impact of diabetic distress on glycemic control in adolescents and young adults with type 1 diabetes. Additionally, the poll revealed that 30% of the sample's monthly income fell most frequently between $5,000 and $10,000[14].

levels of perceived stress among adolescents with typ1 diabetes:

The primary aim of the study was to determine the degree of stress that teenagers with type 1 diabetes who were undergoing treatment at the Specialized Center of Endocrinology Diseases and Diabetes Mellitus in Al-Nasiriyah city felt. In order to assess the presence and intensity of reported perceived stress among those who answered the questionnaire, perceived stress scores were one method used in the study to collect data.

The overall level of perceived stress score for teenagers with diabetes was 1.92, indicating that they experience a moderate amount of stress. Adolescents therefore sense a moderate level of stress.

"Moderate distress" is the overall level of felt stress, which could be caused by Hormonal changes that increase stress levels, social interactions, and academic pressure are just a few of the major psychological and social stresses that can affect teenagers. Teens who have diabetes may experience stress due to the need to constantly monitor their blood sugar levels, take their medications as prescribed, and adhere to a specific diet. This is in line with the results of a study done at diabetes summer camps, which showed that all participants felt more stressed than usual [15].

levels of self-care activity among adolescents with typ1 diabetes:

The adolescents in the study scored poorly on self-care activities, according to the study's findings. This can be the result of their ignorance of the value of self-care in controlling their diabetes and preserving their health. They might not know enough about the value of exercise, how to plan a healthy diet, or how to evaluate blood sugar levels. Some teenagers might find it difficult to maintain a healthy lifestyle and prioritize self-care. This can be the result of their ignorance of the possible repercussions of disregarding medical advice. The results of this study were consistent with a study on care management among children and adolescents with diabetes mellitus that was carried out in Malaysia and discovered that the adolescents with T1DM had inadequate levels of self-care activities. [16].

Correlation of perceived stress and diabetes self-care activity in participants with type 1 diabetes.

The results of the study show that, according to Standardized Coefficients Beta, there is a statistically significant negative association between self-care activity and perceived stress at a p-value threshold of < 0.05 (0.001). This indicates that adolescents who report feeling more stressed out tend to engage in less self-care for their diabetes. The unfavorable association between adolescents with type 1 diabetes's discomfort and self-efficacy can be attributed to a number of causes, such as: Elevated degree of mental strain: Adolescents diagnosed with type 1 diabetes have significant psychological strain due to feelings of anxiety, tension, and frustration, which negatively impacts their degree of self-efficacy. The illness's effects on day-to-day living: Adolescents with type 1 diabetes face numerous challenges in their daily life, including the need to maintain a nutritious diet and regularly check their blood sugar levels, which can significantly impact their capacity to function. Social and mental difficulties: Teens with type 1 diabetes experience psychological and social difficulties that lower their self-efficacy because they feel weak, alone, and withdrawn. and this is consistent with research on the impact of stress and coping mechanisms on diabetic self-care behaviors. significant differences between the perceived stress levels for maintaining a balanced diet and taking care of one's feet were discovered [17].

Conclusions and recommendations

based on the results of a study on the relationship between adolescents with type 1 diabetes's reported stress levels and their self-care practices. It is critical for caregivers and healthcare professionals to understand how adolescents with type 1 diabetes engage in diabetes self-care when they sense stress. Enhancing these people's general health and well-being requires interventions that lower stress levels and encourage self-care practices. In order to meet the unique requirements of teenagers with type 1 diabetes in managing stress and improving self-care skills, further research and customized interventions are required.

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