**IOSRPHR**

# Assessing the Quality of Life of Children with Type 1 Diabetes and the Impact of the Disease on the Functioning of Families, A Field Study in Kafr El-Sheikh, Egypt.

## Sheren Sobhy Sehsah,Pharmacist and BCNSP. Ahmed Anwer Mangoud, pharmacist.Doaa Mohamed Al ghonimy, pediatric consultant.Khadra Shabaan Hassan, Staff nurse.Noura Abd Elwahab,Staff nurse.

*Health Insurance Organisation in Egypt.*

**Abstract**

The aim of the study was to evaluate quality of life in children with type 1 diabetes mellitus (T1DM) in Kafer El Shiekh area. A lifelong disease that requires constant management.

Diabetes mellitus (DM) is a common chronic disorder in children and is caused by absolute or relative Insulin deficiency, with or without insulin resistance. Field research was conducted on 58 children with type 1 diabetes from the spring of 2023 to the spring of 2024. A questionnaire was conducted for the parents with informed consent, and some variables were examined about the patients, including age, history of infection, and response to diet, eating healthy food, growth naturally, learning difficulties, and exercise. All of these and other variables were measured; it's impact on the child, the extent of his response to it and the extent of its impact on his health condition.

**Keywords:** Type1diabetes mellitus, quality of life, Children, Age, six and other variables.

## I.    Introduction

Diabetic child disturbed all the family, as father and mother fell uncomforted, they feel bad from the first time as they can't understand the nature of the disease and how to deal with their child.

DM, is different from any disease as it is affected by the psychological and illness state of the child, blood glucose can be very high without eating more (counter regulatory hormones are secreted as a result of stress or illness. Elevation of glucagon, epinephrine, cortisone , and growth hormone lead to increased hepatic lead to hyperglycemia ) so the presence of a child with diabetes in any family leads to disruption of the nature of the family's daily life, he needs a lot of care and attention. This also represents a moral and material burden on the family in particular and on society in general.

Therefore, we investigated the cause of widespread spread of T1DM among children and search for tools that help to reduce the incidence of the disease, to improve the quality of life and to decrease the complication of the disease.

Type 1 diabetes mellitus (T1DM), also known as autoimmune diabetes, is a chronic disease characterized by insulin deficiency due to pancreatic β cells loss and leads to hyperglycemia. Although the age of symptomatic onset is usually during childhood or adolescence, symptoms can sometimes develop much later. Although the etiology of T1DM is not completely understood.

Recent trends have indicated that the incidence of diabetes is increasing rapidly worldwide with a dramatic increase in prevalence in the Middle Eastern countries, among adults [2] and in children alike [3, 4]. This trend is evidenced and emphasized by a 3% increase in the occurrence of this disease in children, in whom it manifests itself in many debilitating ways [1, 4].

According to the IDF Diabetes Atlas—Seventh Edition [3], the number of children (0–14 years) with T1DM in the Middle East and North Africa (MENA) Region is 60,700 and the number of newly diagnosed children each year is 10,200. According to the IDF Diabetes Atlas—eighth Edition [4], the number of adolescents in Qatar with T1DM is 592, and the number of newly diagnosed children and adolescents, per 100,000 children per year is 12.2.

We make a survey of a group of children with type 1 diabetes to determine the impact of environmental and economic factors on the child's life, it's influence on him, the extent of it's response to health education,

regular medication intake, and other factors.

We make a survey of a group of children with type 1 diabetes to determine the impact of environmental and economic factors on the child's life, it's influence on him, the extent of it's response to health education, regular medication intake, and other factors.

**Ethical Considerations**
The study will conduct in accordance with the guidelines of Egyptian Ministry of Health and will approve by the Institutional Review Board (or Ethics Committee) of Health Insurance Organization. The authors declare no conflict of interest. Written informed consent was obtained from parents of all participating children.

## II. Background

- The objective of the study was to describe quality of life (QoL) of children with type 1 diabetes mellitus (T1DM).
- There is a relationship between the infection and six
- There is a statistically significant relationship between the cause of diabetes and the incidence of any other disease.
- There is a direct relationship between improving the condition of a child with diabetes and eating healthy food
- There is evidence that girls are more responsive to treatment and education sessions than boys
- There is statistical evidence that the side effects of diabetes in children can be reduced by improving the child's quality of life

## III. Research problem

- Is the quality of life has effect on children with type 1 diabetes and the impact of the disease on the functioning of families?
- Is the quality of life different for girls than boys?
- Is there any significant evident about the Cause of T1DM?
- Do educational sessions have any effect on improving the state of diabetic children?
- Is there certain age of infection?
- Is there any ways to improve the quality of life has effect on children with type 1 diabetes?
- Is there any ways to decrease the complication of diabetes?

**Hypothesis**

**a. Primary Hypothesis**
T1DM quality of life is not different among children from low and high socioeconomic groups in Kafer El Sheikh.

**b. Secondary hypothesis**
- There are effect of quality of life and T1DM to improve the health, Psychological and moral state of the children.
- There are significant differences between boys and girls in understanding the nature of the disease and its susceptibility to some variables.
- There is a significant evident about the cause of T1DM.
- Infection increase from age 6 to 15 years.
- Giving educational sessions have great effect on children with T1DM.

**Importance**
In view of the terrifying annual increase in the number of children with T1DM and the resulting social and economic effects on the country, there was a need to investigate the reasons that led to this and what is necessary to reduce the side effects or improve the situation for children.

**Scientific importance**

Opening new horizons for research into variables that could have a major and effective role in reducing the incidence of type 1 diabetes in children.

Research the possibility of reducing the side effects of diabetes.

**Practical importance**

Reducing the cost and abuse of antibiotics and cortisone, which would reduce children's immunity, making them more vulnerable to immune diseases, especially T1DM, where there is a percentage of children were found to have contracted the disease as a result of high temperatures and common cold.

## IV.    Methods

A random study of 58 patients with T1DM from Kafer El Sheikh 28 girls and 30 boys (range 5 -17). Inclusion criteria (age, sex, family level of education, onset of occurrence, symptoms , regular taking medication , understanding the nature of the disease , taking educational sessions , eating healthy food , doing exercises , responding to diet , growing normally , learning difficulty and diabetic occurrence due to disease ).

**Statistics methods**

Statistical analysis was done using IBM SPSS® Statistics version 26 (IBM® Corp., Armonk, NY, USA). Numerical data was expressed as mean and standard deviation or median and range as appropriate. Qualitative data was expressed as frequency and percentage. Pearson's Chi-square test or Fisher's exact test was used to examine the relation between qualitative variables. Correlation between numerical variables was tested using Pearson's correlation. All tests were two-tailed. A p- value < 0.05 was considered significant.

## V.    Discussion

This study showed the importance of health education for children, their families, and health givers, the importance of exercise, following a diet in improving the quality of life and the extent to which they are affected. There is a clear difference between boys and girls in many points, including exercising (The study showed that girls in the Egyptian countryside rarely practice sports, and few of them in urban areas practice sports. Some studies have shown the importance of sports in improving the psychological and health condition of children in general and boys in particular ), following a diet, receiving education sessions, and the extent to which this affects boys in a positive way.

- The study also showed that there is no difference between boys and girls in the age of infection, or growth normally.
- However, it has been shown that girls develop diabetes as a result of other disease more than boys and that the most noticeable symptom is frequent urination, which is more common in boys.
- Boys suffer from learning difficulties more than girls, while boys understand the nature of the disease more than girls because they receive health education sessions more than girls.
- Many studies have shown consensus on the importance of health education for children, their parents, and health giver.
- One study showed that, T1DM children are promoting self-management; enhancing physical and psychological wellbeing, treatment adherence, and continuous health education improve their state [5].
- Other study found reduction in educational and emotional function of children, health education of diabetes were an important predictor of quality of life. Female gender was an influencing predictor of lower quality of life scores.  Health educations on diabetes were positively associated with physical functioning [6].
- From other side one study concluded that, social functioning of the children and adolescents was high although, emotional and school functioning was low. There was a negative relationship between age, diabetes duration, insulin administration of three times daily, and quality of life [7].

## VI.    Result

The study was established on children with T1DM showed the following results, The improvement rate for children who suffer from weight loss and follow a healthy diet is 56.5 %, while the percentage of children who do not suffer from weight loss and follow a healthy diet reaches 40 %. The percentage of children who take medication regularly and follow a healthy diet improves to 51%, while the percentage of children who not taking regular medication and not responding to diet is 85.7 %. It is clear that a high percentage of children do not receive health education sessions and the impact of this on their response to following a healthy diet, as the percentage reaches 76%. While a better response and improvement in the condition of children appears by giving them education sessions, where the percentage reaches 63.6%. The effect of eating ready-made foods on children's health and its impact on their health and response to medication is 59.5% among children. While the

effect of eating healthy food by following a healthy diet and its impact on the child's health becomes clear, as the percentage of responding children reaches 92.6%. The children who develop diabetes without a reason for diet improves by 51.5%, while children who develop diabetes as a result of another disease improve by 40%. The children who suffer from difficulties in learning and responding to diet improve by 55.6%, which leads to an improvement in their learning achievement. Many children were found to constantly eat unhealthy food at a rate of up to 63.8%. Most patients do not exercise at a rate of up to 63%, while it was found that a rate of only 46% of children eat healthy food. Children are affected by a rate of up to 57% by taking educational sessions on. The child who is living in the family home improves by up to 55.2%. The age group that is responding more to the diet is children aged 11-15 years. Frequent urination as a symptom of diabetes appears more common among boys, at a rate of 83.3%, while in girls, at a rate of 67.9%.Boys respond more than girls to following a diet, as the percentage for boys reaches 50%, while for girls it is 42.9%. Boys understand the nature of the disease by 70%, while girls understand by 50%. 63.3% of Boys receive educational sessions; while only 50% girls receive .Girls eat ready-made foods at a rate of 71.4%, while boys eat at a rate of 56.7%. Boys eat healthy food at a rate of 53.3%, while girls eat at a rate of 39.3%. Boys practice sports at a greater rate, reaching 43.3%, while girls practice sports at a greater rate of 28.6%, which negatively affects girls general health .The incidence of diabetes as a result of another disease is more common in girls, reaching 60.7%, while in boys it is 26.7%. The percentage of boys suffering from diabetic coma is reaching 16.7%, while the percentage of girls are suffering from diabetic coma is 32.1%. Learning difficulties appear at a greater rate in boys, at a rate of 36.7%, while in girls, at a rate of 25%. Children from age one to three years show the highest incidence of type 1 diabetes, reaching 62.1%, and there is no difference between boys and girls in the incidence age except girls fewer than 5 years are showing high incidence of occurrence. The most common symptoms of the disease are frequent urination and extreme thirst. The percentage of the disease that is occurring as a result of another disease reaches 60.7 in girls, especially high temperature and common cold while in boys is only 26.7 %. Diabetic coma occurs at a relatively high rate among kids just reach out 34%. There is no evidence that the kinship between the father and mother and the age of marriage of parents have any effect on the occurrence of the disease.

## VII. Conclusion

Highly incidence of T1DM in age from 6 to 15 years. They became better with educational sessions. Boys can understand the nature of the disease better than girls. Girls are eating junk food more than boys so they are susceptible to diabetic complication more than boys. Many girls suffer from diabetes as a result of another disease more than boys, so girls should be given more attention during childhood.

## VIII. Recommendation

- Notice any change that occurs in the child, such as frequent urination, extreme thirst, or weight loss for no reason, to detect the disease quickly and take the medication regularly.
- Increasing awareness among parents, especially those who are uneducated, through educational sessions at diabetes clinics, in schools, and through social media
- Exercising and maintaining it leads to improving the health and psychological condition of children.
- Use antibiotics and allergy medications, especially cortisone, when needed and under the supervision of a doctor.
- Taking influenza vaccine may be decrease the incidence of occurrence of T1DM.
- Make sure to visit the doctor regularly and follow his instructions.
- Pay attention to following a healthy diet and not eating any unhealthy foods.
- Increase the awareness of people who are living in the countryside to the importance of exercise especially for girls

## References

[1]. Al-Abdulrazzaq, D.; D. Khalifa; T. Alqaisi; F. Al-Juailla; F. Othman; S. Qabazard and H. Al- Kandari (2022). Health-related quality of life of children and adolescents with type 1 diabetes during the COVID-19 pandemic in Kuwait. Frontiers in Public Health. frontiersin.org. 10.3389/fpubh.2022.1056967. [Google Scholar]

[2]. Bekele, T. 1, T. G. Demie 2, F.Worku2,(2022) Health-Related Quality-of-Life and Associated Factors Among Children and Adolescents with Type 1 Diabetes Mellitus: A Cross-Sectional Study. Pediatric Health, Medicine and Therapeutics 2022:13. Visit http://www.dovepress.com/ testimonials.php to read real quotes from published authors.: http://www.dovepress.com/pediatric-health-medicine-and-therapeutics-journal. [Google Scholar]

[3]. Federation ID. IDF Diabetes Atlas, 7th Edn. Brussels: International Diabetes Federation; (2015). [Google Scholar]

[4]. Federation ID. IDF Diabetes Atlas: 8th Edn. Brussels: International Diabetes Federation; (2017). [Google Scholar]

[5]. Girma ,D. MSc1 , R. Murugan, PhD2,K. Wondossen, MSc2, S. Yeshiwas, MD2, A. Wale, MSc1, and S. Tilahun, MS (2021). Health-Related Quality of Life and Its Associated Factors in Children and Adolescents with Type1 Diabetes, Addis Ababa, Ethiopia. Global Pediatric Health. Desalegn Girma https://orcid.org/0000-0003-0001-8553. [Google Scholar]

[6].     Organization WH. Global Health Estimates 2016: Disease burden by Cause, Age, Sex, by Country and by Region, 2000–2016. Geneva: World Health Organization; (2018). [Google Scholar]
[7].     Organization WH. Global Health Observatory (GHO) Data Map Gallery (2017). Available online at: https://www.who.int/uat-portal/map-gallery