

Factors Affecting Diabetes Control in Children with Type 1 Diabetes

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**BSC in Nursing Science
Faculty of Nursing
EL Mansoura University
Submitted in Partial Fulfillment
Of the Master Degree in Pediatric Nursing**

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Introduction

Diabetes mellitus (DM) is a chronic metabolic condition in which the body is unable to metabolize and use carbohydrates , fats and proteins properly owing to a deficiency of insulin , an internal secretion of the pancreas (Schulte etal ., 1997) . DM is characterized by hyperglycemia and glucosuria and occurs as a common end point of many disease processes (Behrman & Kliegman , 1998) .

The principal childhood disorders associated with pancreatic dysfunction are D.M and cystic fibrosis (Pillitteri , 1992).

Surveys were done to estimate the incidence of D.M in the united states revealed that 1.22 per 1.000 school – age children were affected (Weller , 1991) , 1 in 600 school-age children (Cullen , 1992) , 1:5000 children were affected (Carter & Dearmun , 1995) . 1:300 children under 20 years old (Schulte stal.,1997) and 1:500 children under 18 years of age were affected (Behrman & kliegman , 1998) .

Potential problems of children with type 1 diabetes are hypoglycemia , hyperglycemia and diabetic keto acidosis . Hypoglycemia is due to missing a meal , exercise , altered provision of insulin , absorption of insulin and stress while hyperglycemia is due to insufficient insulin , rapid growth , puberty , no, recent appraisal of insulin needs , illness , intake of additional food , stress & poor rotation of injection sites leading to poor absorption but diabetic keto acidosis is the most complete state of insulin deficiency and is a life

threatening situation (Carter & Dearmun , 1995 & Campbell et al .,1995)

The complications of DM that usually related to the degree of diabetes control are retinopathy & cataract ,neuropathy , renal disease , increased incidence of gangrene , myocardial infarction and stroke . (Carter & Dearmun , 1995)

There are many factors affecting diabetes control ,these factors are lack of child's knowledge about his illness , lack of encouragement , emotional stress of the child and degree of child's dependency in self-care activities . (Pillitteri , 1992 & advanced nursing , 2002) Also low socio economic status of the child may affect diabetes control. (Weller , 1991 & Carter & Dearmun , 1995) Other factors that affect diabetic control and need to be assessed by investigator such as duration of illness , presence of other health problems , age & Personality traits. (Schutle et al ., 1997 & Scilling et al ., 2002)

The nurse's role in diabetes control include managing the child during the initial hospitalization , providing continuing education to the child about how to administer insulin , how to test the urine for Ketones , how to measure blood glucose level , how to recognize hypoglycemia , how to manage the diet , reinforce the importance of exercise and provide emotional support to the child (Ball & Bindler , 1995 & Shapiro , 1995 & Leyclen et al ., 2000).

Aim of the Study

To assess the factors affecting diabetes control in children with type 1 diabetes .

Research hypothesis :

- Lack of children's knowledge about their illness may affect their diabetes control .
- Lack of children's encouragement may affect their diabetes control.
- Age and level of education of children may affect their diabetes control .
- The degree of child's dependency in self-care activities may affect their diabetes control .
- There may be a relationship between socioeconomic status of the child and diabetes control .
- There may be a relationship between the child's duration of illness and diabetes control .

Operational Definitions :

1-Diabetes control :

Is a fasting blood glucose (FBG) 80 – 120 , post prandial blood glucose (PPBG) is < 180 , glycosylated hemoglobin from 6.5 – 7.5 , no attack of hypoglycemia , cholesterol level < 200 and done once per year , clinically no ; polyuria , polydipsia , loss of weight and urine free from ketones , glucose & albumin (W.H.O report , 1995)

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2-Type I diabetes :

(formerly insulin – dependent diabetes mellitus (IDDM) or juvenile – onset) is an autoimmune disease characterized by B-cell destruction usually leading to absolute insulin deficiency (Baker , 2001) .

3-Children :

The period from 6-18 years of age including school age from 6-12 years and adolescent from 12-18 years(Schulte etal ., 1997).

subjects and Methods:

A) Setting

this study will be conducted in pediatric hospital of ELMansoura university including in & out patient departments .

B) Sample

The study will comprised all available children with type 1 diabetes over (6 months) period under the following

❖ Inclusion Criteria :

- 1-Age :6 – 18 years , regardless their gender , residence and educational level .
- 2-Confirmed diagnosis of type 1 diabetes .
- 3-Regular attendance at the out patient clinic .

❖ Exclusion Criteria :

Mentally handicapped children .

C) Tools and Technique of Data Collection :

Questionnaire by interviewing to gather data in relation to the following :

- characteristics of children (age , gender , level of education & residence) .
- Factors affecting diabetes control as lack of child's knowledge about his illness , degree of child's dependency in self care activities , low socio economic status of the childetc).

Operational Design

1-Review of literature that relevant to the research topic using books , magazines , periodicalsetc.

2-An approval to conduct the study will be obtained from chair persons of the study setting in addition to child & parents as well .

3-The investigator will be available one day per week from 9 a.m –1 p.m , each child will be individually assessed using study tool .

4-A pilot study will be conducted to assess clarity of the study tool and time required to fill in the study tool.

Analysis of the Results :

- the collected data will be organized , tabulated and analyzed .
- A proper statistical test will be conducted .

Discussion , Conclusion , Recommendations & Summary .

will be stated based on current related literatures and finding of the present study .

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Arabic summary

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Dedication to my :

Parents

Husband

&

My Lovely daughter

Alyaa

إهداء إلى

أبي وأمي وزوجي

**أعطيتكم الكثير
وأبدا لن أوفيكُم حقكم**

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