
“Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Type-1 Diabetes Mellitus among Children”

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INTRODUCTION

All children like to have many different health problems during childhood. But most of them have only mild problems and these problems do not interfere with their daily life and development. For some children, however, chronic health conditions affect every day throughout life. These conditions will affect the child's normal activities, and requires lots of hospitalizations and/or home health care and/or extensive medical care. Children with chronic illness such as asthma, diabetes mellitus, cerebral palsy, sickle cell anaemia, cystic fibrosis, cancer, AIDS, epilepsy, spina bifida, congenital heart diseases may be ill or well in their living environment. Life with a chronic condition can be very challenging for a child, parents and family (Kyla boyse, 2012).

Diabetes mellitus is the most common endocrine disorder and chronic conditions in children. Children with new-onset type-1 diabetes and their families require intensive diabetes education and provide them with the necessary skills and knowledge to manage this disease. Risk factors can be modified and help the children to meet the physical and emotional need to ensure long term outcomes (**Diane Wherreltt, 2013**). Diabetes mellitus is a general term for heterogeneous disturbances of metabolism. The cause is either impaired insulin secretion and insulin action or both. It is mainly divided into two types type-1 diabetes mellitus and type-2 diabetes mellitus (**W.Kerner, 2014**).

Type-1 diabetes mellitus is an inflammatory disease of the islets cells and results from an autoimmune process that causes their eventual destruction. Although multiple genes are thought to play a role in the genetic predisposition to type-1 diabetes, an environmental trigger to the autoimmune destructive process. Possible triggers include viral infection, dietary toxins, history of obesity, and certain chemicals (**Susan Rowen James, 2013**).

Diabetes in childhood typically presents with polyuria, polydipsia, polyphagia, weight loss and weakness. If the treatment not given early the child can exhibit signs and symptoms of diabetic ketoacidosis such as vomiting, dehydration, abdominal pain, deep rapid respiration and fruity odour acetone in the breath. Severe acidosis is accompanied by decreasing consciousness and hypotension. Children who receive insulin for treatment of type-1 diabetes mellitus can have hypoglycaemia (**A.Parthasarathy, 2009**).

The prevalence of disease is increasing worldwide and leads to the development of chronic complications. It has been recognized for years that the complications may be disabling or eventually life threatening negatively affect the quality of life in individuals with diabetes. Specifically, the complications of diabetes have been classified as either primary

complications such as hypoglycaemia, diabetic ketoacidosis and secondary complications such as retinopathy, nephropathy, and neuropathy (Melendez-Ramirez LY, 2010).

KEY WORDS: *Structure Teaching Programme, Diabetic client, Diabetes Mellitus*

NEED OF THE STUDY

According to American Diabetes Association, type-1 diabetes affects 250-350 people in Western countries by the age of 20 years. In 2014-2016, the annual incidence of type-1 diabetes was estimated at 18,436. In 2018, it was estimated that

29.1 million Americans had diabetes, 86 million had pre diabetes (American Diabetes Association).

According to International Diabetes Federation, In 2018, an estimated 12,600 children age < 15 developed type 1 diabetes (T1D) and India accounts for most of children with Type-1 diabetes (Shashank R. Joshi, 2019).

Globally, more than one in 10 adults are now living with diabetes. Moreover, there is a growing list of countries where one-in-five or even more of the adult population has diabetes. Since the first edition in 2000, the estimated prevalence of diabetes in adults aged 20–79 years has more than tripled, from an estimated 151 million (4.6% of the global population at the time) to 537 million (10.5%) today. Without sufficient action to address the situation, we predict 643 million people will have diabetes by 2030 (11.3% of the population). If trends continue, the number will jump to a staggering 783 million (12.2%) by 2045. The rising number of persons with diabetes is driven by multiple factors – people are living longer and we have higher quality data. However, much of the diabetes burden remains hidden. Almost every time we find new and more accurate data, our estimates have to be revised upwards. IDF (International Diabetes Federation 2021)

According to various statistics, the researcher observed that prevalence of type-1 diabetes is high and also the adolescents have less knowledge regarding type-1 diabetes mellitus. If they improve their knowledge they can maintain good quality of life. So the researcher felt that there is a need to providing education regarding diabetes to the adolescents to improve their quality of life. Therefore the present study is aimed to evaluate the effectiveness of the structured teaching programme on knowledge regarding type-1 diabetes mellitus.

PROBLEM STATEMENT:

A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Type-1 Diabetes Mellitus Among Children With Type-1 Diabetes Mellitus In Selected Hospitals Pune (Maharashtra).

OBJECTIVES

- To assess the level of knowledge regarding type-1 diabetes mellitus among children with type-1 diabetes mellitus.
- To assess the effectiveness of Structured Teaching Programme regarding type-1 diabetes mellitus among children with type-1 diabetes mellitus.
- To associate the findings with the selected demographic variables.

HYPOTHESIS

Children who receive structured teaching programme regarding type-1 diabetes mellitus will show a significant improvement in the level of knowledge in post- test than pre- test.

Type-1 diabetes is a chronic disease. In type-1 diabetes, the cells in the pancreas that make insulin to destroy and the body is unable to produce insulin. The exact cause of type -1 diabetes is unknown but it is thought to be an auto immune response, such as viruses, triggers the body's immune system to create an antibody that kills the cells in the pancreas responsible for making insulin (**Rose Kavi , 2014**).

A quasi experimental study was conducted to assess the effectiveness of structured teaching programme on self- administration of insulin injection among type-1 diabetes mellitus children in Karvendinagar. 30 samples were selected by using non probability purposive sampling technique. The results showed that in pre-test 97% of samples had moderate knowledge and 3% had inadequate knowledge and none of them had good knowledge. In post-test 28% had adequate knowledge and 7% had moderate knowledge on self administration of insulin injection. The researcher concluded that structured teaching programme was an effective intervention in improving the knowledge of diabetes children regarding self administration of insulin injection (**P.M. Prathiba, 2017**)

RESEARCH DESIGN

The research design is the master plan specifying the methods and procedures for collecting and analysing the needed information in a research study (**Suresh K.Sharma, 2015**). The researcher adopted **one group pre-test post-test design** in this study.

SETTING OF THE STUDY

The setting chosen for this study is Paediatric Endocrinology OPD in Ruby hospital Pune Maharashtra.. Ruby hospital is a 200 bedded hospital and has a team of experienced and efficient doctors and nurses in each department. Pediatric Endocrinology is one of the specialist departments in the hospital. Approximately more than 100 children were consulting per month in the OPD. Special nutritional department for diabetes children and diabetic counseling is also available in the Ruby hospital Pune Maharashtra.

POPULATION

The children who are having type-1 diabetes mellitus are considered as target population and among those who are met inclusion criteria are considered as accessible population. Hence, sample size taken for the study is 30.

SAMPLE TECHNIQUE

Convenience sampling technique was adopted for this study. Children who have fulfilled the inclusion criteria are selected as samples. According to the sample size calculation, 30 children were selected for the study.

METHOD OF DATA COLLECTION

Data collection was done for a period of four weeks. A written permission was obtained from the management of the Ruby hospital Pune Maharashtra.

The researcher introduced herself and explained about the purpose of the research and assured confidentiality and anonymity and obtained consent from parents of their children with type-1 diabetes mellitus.

The demographic variables were collected by using structured interview schedule. The pre-test was conducted to assess the knowledge regarding type-1 Diabetes mellitus by using structured questionnaire. Structured Teaching Programme was given to the children regarding Type-1 Diabetes mellitus for 30 minutes by using an information booklet. Their doubts were clarified by the researcher after the structured teaching programme. By the end of II week, post-test was done by the researcher using the same tool.

MAIN STUDY

Main study is a small study often carried out to help in preparing a larger and more comprehensive investigation (**Suresh K Sharma, 2015**). The researcher conducted the study in Pediatric Endocrinology OPD in Ruby hospital Pune Maharashtra. Sample were conveniently assigned based on the criteria (n=30). The demographic variables were collected from the subjects based on structured interview method.

In pre-test, knowledge was assessed by using structured questionnaire. Following pre-test the samples received Structured Teaching Programme regarding type-1 diabetes mellitus for 30 minutes by using information booklet and their doubts were clarified by the researcher. By the end of II week the post test was conducted by the researcher using the same tool.

CONCLUSION:

Children are major consumers of health care. Care of children with diabetes differs from that of adults. Children always need special care to survive. The results of this study showed that Structured Teaching Programme regarding type-1 diabetes mellitus improves knowledge level of the children with type-1 diabetes mellitus. Education regarding the disease process, self blood sugar monitoring, self administration of

insulin injection, dietary management and prevention of short-term, long-term complications should enrich their skills and knowledge to manage their disease safely and effectively to minimize the long-term complications.

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