

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON CARE OF CHILDREN WITH JUVENILE DIABETES AMONG THE NURSING STUDENTS.

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Abstract

The new statistics indicates that Juvenile Diabetes is now becoming far more common among poor and needy children and women who are in gestation. The most worrying aspect is increasing prevalence of diabetes in poor children in India. It requires the combined effort of both the physician and the nurse. The nurse should understand the effect of Diabetes on the child and family, appreciate developmental issues for each stage of Diabetes and their relationship to Diabetes and recognize their influence on the care of child with Juvenile Diabetes. One group pretest – post test research design was adopted for the study. In view of the nature of the problem and objectives of the study a structured interview schedule and planned teaching programme was developed focusing on the domiciliary management of Juvenile Diabetes. The sample comprises of 85 students of third year B.Sc. Nursing selected by non probability convenient sampling technique. Structured interview schedule was used to collect needed data followed by that Planned teaching Programme on domiciliary management of Juvenile Diabetes. After the pretest, a planned- LCD teaching programme was given for 45 minutes. Post-test was administered after six days. The data collected were tabulated and analyzed by using descriptive and inferential statistics. Results show that 82 (96.47%) students had inadequate knowledge in pre-test, 3 (3.53%) students had moderate knowledge and none of them had adequate knowledge in pre-test. In post-test, 30 (35.3%) students had moderate knowledge, 55 (64.7%) students had adequate knowledge and none of them had inadequate knowledge on Juvenile Diabetes. The study concludes that the Planned teaching Programme was effective in

improving the knowledge of students regarding domiciliary management of Juvenile Diabetes.

Key words: Effectiveness, structured Teaching Programme, Juvenile Diabetes, care of children.

Introduction

Diabetes mellitus was once thought to be the disease of the aged, but a large number of children are affected by this disease today. In India around 10.5/1 lakh are affected by Juvenile Diabetes each year. As of 2009, there is no known cure for Juvenile Diabetes in the modern clinical sense. With over 35 million diabetics' patients, India is sitting on a volcanic diabetes epidemic, the scale of which far surpasses anything previously witnessed. According to a World Health Organization (WHO) estimate, India will have around 80 million diabetes patients by 2030. Juvenile Diabetes is caused by the body's inability to produce sufficient insulin. The precise reason for this inability is something of a mystery, although there is almost certainly an underlying genetic cause which is triggered by a combination of different environmental factors.

In healthy people insulin is produced by cells, called beta-cells, within an area of the pancreas but, in case of Juvenile diabetes, these cells become damaged and production either ceases or is reduced. Although not in itself a life-threatening disease, Juvenile diabetes accounts for a significant number of deaths, particularly premature deaths, from complications arising out of the condition. These can include cerebral vascular disease, renal disease, heart disease, vascular disease and gangrene in the lower limbs, visual difficulty and blindness.

The primary focus on Diabetes care is on education on everyday aspect of Diabetes management including insulin administration, diet adjustments, exercise and sick day guidelines. The nurse has a pivotal role in educating the child and family from the time of diagnosis and continuing through follow up visits. With a huge level of urban migration, poverty and the socio-economic transition that has taken place over the last decade, people have experienced tremendous lifestyle changes. New statistics indicate that diabetes is now becoming far more common among poor and needy children and women who are in gestation. The most worrying aspect is increasing prevalence of diabetes in poor children in India.

In the new millennium that has been characterized by a life that is more frenetic and fast-paced, children have stopped enjoying physical activity and have no time for sports and games. A majority of their time is taken up by academics and any free time that they do get, is spent in front of a television or a computer. Their food habits have worsened. Home-cooked and healthy meals have given way to calorie-rich junk food. Childhood obesity is on the rise and so is childhood Type 2 Diabetes, or Non-insulin dependent diabetes. According to one study conducted in Chennai, there has been a ten-fold increase in Type 2 Diabetes in the last 20 years. But, according to Dr. Ahluwalia of the Diabetes Care Foundation, children suffering from Juvenile diabetes cannot be ignored and do also need equal if not more attention and care.

Feustel (1976) investigated on senior nursing students about to graduate from baccalaureate programs regarding the knowledge about Diabetes mellitus to teach diabetic patients and their families. The sample consisted of 144 volunteer subjects from four colleges in a metropolitan area. A student was considered eligible to teach diabetic patients if he could answer all questions correctly on a 34-item instrument. None of the participants answered all questions correctly. All students answered only two questions correctly. The study indicated that the graduating students were not prepared to do diabetic teaching.

Hampson, et al. (2001) reported that educational and psychosocial interventions have small to medium beneficial effects on various diabetes management outcomes. Quantitative and narrative analysis of the evidence suggested that interventions are more likely to be effective if they demonstrate the inter-relatedness of the various aspects of diabetes management. It requires the combined effort of both the physician and the nurse. The nurse should understand the effect of Diabetes on the child and family, appreciate developmental issues for each stage of Diabetes and their relationship to Diabetes and recognize their influence on the care of child with Juvenile diabetes. Thus, the nursing students should be well educated about the care of a child with Juvenile Diabetes in order to provide quality care for these affected children during their practice. Therefore, the investigator has decided to conduct a teaching program for nursing students about care of child with Juvenile Diabetes and to study the effectiveness of the teaching program.

Objectives

- To assess the pretest knowledge regarding care of children with Juvenile diabetes among B.Sc. Nursing III year students.
- To evaluate the effectiveness of structured-teaching programme on care of children with Juvenile diabetes among B.Sc. Nursing III year students.
- To find out the association between pre-test knowledge and selected demographic variables such as previous clinical exposure, previous class and knowledge of a relative or friend with Juvenile diabetes.

Hypothesis

The students of B.Sc. Nursing III year will demonstrate significant improvement in the level of knowledge regarding care of child with Juvenile diabetes after attending the structured- teaching programme.

Methodology

A pre-experimental research approach was adopted for this study and one group pretest – post

test design was selected to determine the effectiveness of the STP on Juvenile Diabetes. The study was conducted on B.Sc. Nursing III year students of Lakshmi Bai Batra College of Nursing, New Delhi. A total of 85 students were selected for the study. Convenience sampling technique was used to select subjects from the target population.

Sampling Criteria

Inclusion criteria

- Students of B.Sc. Nursing III year students.
- Those who were willing to participate.

Exclusion criteria

- Those who were on medical leave.

Development and description of the tool

Structured-interview schedule was selected for the study. The tool was developed after adequate retrieval of research studies under the guidance of nursing and medical experts.

Level of knowledge	%	Range of score
Inadequate	<50	<38
Moderate	50-75	38-56
Adequate	>75	>56

Description of the tool

Section A: Demographic data

It included the demographic variables such as previous clinical exposure, previous classes on Juvenile diabetes and knowledge of any family member, and relative or friend with Juvenile diabetes.

Section B: Structured-Questionnaire

It consisted of 75 closed ended questions to assess the knowledge regarding anatomy and physiology of pancreas, types of Diabetes mellitus, definition, incidence, etiology, pathophysiology, clinical manifestations, diagnostic tests, treatment, complications, prognosis and nursing care of Juvenile diabetes.

Score interpretation

Each question had four options out of which only one option was correct. The correct answer was given a score of '1' and the wrong answer was scored '0'. The total score was 75.

Results

Table 1

Frequency and percentage distribution of demographic variables of B.Sc nursing III year students. (N = 85)

Groups	No	Percentage (%)
Previous clinical experience		
a. Yes	4	81
b. No	81	
Had a class on Juvenile Diabetes		
a. Yes	85	85
b. No	0	0
Know any relative or friend		
a. Yes	0	0
b. No	85	85

Table 1 reveals that 4 (4.7 %) students had previous clinical exposure on Juvenile diabetes and 81 (95.3 %) students did not have previous clinical exposure on Juvenile diabetes. It also shows that all of them had previous class on Juvenile diabetes and did not know any relative or friend with Juvenile diabetes.

Table 2
Frequency and percentage distribution of knowledge of students of third year B.Sc. nursing in pretest and post test. (N = 85)

Level of Knowledge	Pre test knowledge		Post test knowledge	
	No.	%	No.	%
Inadequate knowledge	76	89.42	0	0
Moderate knowledge	9	10.58	13	15
Adequate knowledge	0	0	72	85
Total	85	100	85	100

Table 2 reveals that 76 (89.42%) students had inadequate knowledge, 9 (10.58%) of them had moderate knowledge and none of them had adequate knowledge on Juvenile diabetes in the pretest. In the post test, 13 (15%) students had moderately adequate knowledge, 72 (85%) had adequate knowledge and none of them had inadequate knowledge. It shows that there was an improvement in the level of knowledge in the post-test when compared to the pre-test score.

Table 3
Percentage and frequency distribution of level of knowledge of students on prognosis and nursing care of child with Juvenile diabetes. (N = 85)

Level of Knowledge	Pre test		Post test	
	No.	%	No.	%
Inadequate knowledge	76	89.41	0	0
Moderate knowledge	9	10.59	6	7.06
Adequate knowledge	0	0	79	92.94
Total	85	100	85	100

Table 3 shows that in pretest, 76 (89.41%) students had inadequate knowledge, 9 (10.59%) students had moderate knowledge and none of the students had adequate knowledge on prognosis and the nursing care of child with Juvenile diabetes. In the post-test, 6 (7.06%) students had moderately adequate knowledge, 79 (92.94%) students had adequate knowledge and none of the students had inadequate knowledge on prognosis and nursing care of child with Juvenile diabetes.

Table 4
Comparison of Mean and Standard deviation of knowledge score in pre test and post test. (N = 85)

	Mean	S.D.	Mean difference	Student 't' value	P value
Pre test	22.21	7.61	37.51	35.432	<0.001 (S)
Post test	59.72	6.28			

S-Significant

Table 4 shows that the average pretest knowledge score among students of third year B.Sc. Nursing was found to be 22.21. After the structured teaching programme, the mean post test knowledge score was 59.72. The standard deviation in pretest and post test was 7.61 and 6.28 respectively. Thus, the difference in the level of knowledge was confirmed by the Student 't' value (35.43), which was significant at $p < 0.001$.

Table 5
Comparison of Mean and standard deviation of knowledge score in various dimensions in pre test and post test. (N = 85)

Knowledge dimensions	Pre test		Post test		Student 't' value	P value
	Mean	SD	Mean	SD		
Anatomy, physiology, types, definition and incidence.	4.4	1.17	10	1.62	27.93	<0.001 (S)
Etiology, pathophysiology and clinical manifestations.	9.28	3.19	21.52	3.87	21.69	<0.001 (S)
Diagnostic tests, treatment and complications.	5.8	3.54	19.4	3.02	28.2	<0.001 (S)
Prognosis and nursing care.	2.72	2	8.78	1.04	25.2	<0.001 (S)

S-Significant

Table 5 shows that in pretest, the mean values for the different dimensions were 4.4, 9.28, 5.8 and 2.72. While in the post test, the mean values were 10, 21.52, 19.4 and 8.78 respectively. The standard deviation values for the pretest were 1.17, 3.19, 3.54 and 2, while for the post test the values were 1.62, 3.87, 3.02 and 1.04 respectively.

The difference in the level of knowledge was confirmed by the Student 't' test values (27.93, 21.69, 28.2 and 25.2), which was significant at $p < 0.001$. Thus, there was a significant increase in the level of knowledge after the structured teaching programme.

Table 6
Association of mean and standard deviation of pre test knowledge among students of third year B.Sc. nursing with certain demographic variables. (N = 85)

Groups		Number	Mean	SD	Mann-Whitney U test	"p" value
Previous clinical exposure	Yes	4	24.1	10.75	181.5	0.001
	No	81	22.1	7.5		(NS)

S-Significant

It is inferred from the above table 6 that the mean pre test knowledge score obtained by the students with previous clinical exposure was 24.5 and for those with no previous clinical exposure was 22.1. The Mann-Whitney U test shows that previous clinical exposure had no significant influence on the pretest knowledge.

Discussion

Nordfeldt, Johansson, Carlsson and Hammersjö (2003) reported that mass distribution of pedagogical devices such as high quality video programme and brochures may contribute to the prevention of severe hypoglycemia. Such self-study materials can reach high dissemination levels and constitute as a cost effective complement to regular visits to a diabetes team and to other types of education. The findings may have implications for other topics, other ages, and other diagnosis groups.

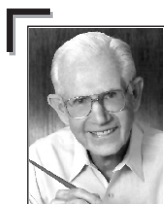
Darbishire, et al (2006) conducted a study to assess students' attitudes of an instructional approach to teaching diabetes care. Students participated in activities that simulated situations patients with diabetes might experience. Over 90% of the students strongly agreed that the lab was interesting, assisted in learning concepts related to lecture, and would help them apply these skills in the “real” world.

Conclusion

The present study assessed the knowledge among nursing students regarding Juvenile diabetes and found that the students had inadequate knowledge related to Juvenile diabetes. After the structured teaching programme on Juvenile diabetes, there was a significant improvement on knowledge of the students regarding Juvenile diabetes. The study concluded that the structured teaching programme was effective in improving the knowledge of students regarding Juvenile diabetes.

Recommendations

- The same type of study can be done on a larger sample to validate findings and to generalize it.
- A correlation study can be conducted with a large sample with a wide range of settings to assess the attitude on Juvenile diabetes.



“Yesterday is history, tomorrow is a mystery,
today is a gift of God, which is why we call it the present.”

- Bill Keane

- A similar study can be conducted using different teaching strategies such as video and demonstration.
- The study can be replicated on staff nurses working in the Pediatric wards.

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