

Effectiveness of Structured Teaching Programme on Knowledge Regarding Hypoglycemia and its Management among Diabetic Patients

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ABSTRACT

Aim: The aim of the study was to improve the knowledge regarding hypoglycemia and its management among diabetic patients.

Methods and Materials: A quantitative pre experimental one group pre-test post-test design was used to collect data from 60 subjects by convenient sampling technique. Self administered structured knowledge questionnaire were used. The collected data was analyzed by using descriptive and inferential statistics.

Results: The Median pre-test score was 13 and Median post-test score was 26. The results revealed that among 60 study participants, majority of the diabetic clients (80%) had good knowledge, 15% had average knowledge and only 5% had poor knowledge regarding hypoglycemia and its management. The structured teaching programme was effective. **Conclusion:** The finding of the study revealed that there was a significant increase in the post-test knowledge scores after structured teaching programme.

Keywords: Knowledge; structured teaching programme; hypoglycemia; Diabetic patients

INTRODUCTION

Diabetes mellitus is a chronic (lifelong) disease marked by high levels of glucose in the blood¹. As per national statistics, in 2008, an estimated 347 million people in the world had diabetes and the prevalence is growing, particularly in low- and middle-income countries. India had 69.2 million people living with diabetes (8.7%) as per the 2015 data. Of these, it remained undiagnosed in more than 36 million people. The number of diabetes patient in India in 2016 was estimated as 422 million and was considered to be 700 million by the year 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men². Nearly 1 million Indians die

due to diabetes every year. Kerala reported a prevalence of diabetes at 35% and prediabetes at 11%. The WHO estimates that diabetes resulted in 1.5 million deaths in 2012, making it the 8th leading cause of death. However another 2.2 million deaths worldwide were attributable to low blood glucose level. Hypoglycemia is the clinical syndrome that results from low blood sugar. The symptoms of hypoglycemia can vary from person to person as do the severity. Hypoglycemia is diagnosed by a low blood sugar with symptoms that resolve when the sugar level returns to the normal range³.

Prevention of hypoglycemia is to monitor blood glucose level frequently and be prepared to treat promptly. Patient at risk for hypoglycemia should always carry glucose tablets, hardly candy or other source of fast acting carbohydrates. Blood glucose awareness training can improve a person's ability to recognize low blood glucose earlier, which may help to prevent episodes of hypoglycaemia³. Managing diabetes, while minimizing hypoglycemia, is a key treatment goal in the Pharmacological control of diabetes.

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Hypoglycemia is the condition, when one's blood glucose is lower than normal, usually less than 70mg/dl. It occurs because of a mismatch between insulin dose, food intake and energy expenditure. The individual fails to become aware of hypoglycaemia and can result in prolonged hypoglycemia with consequent brain injury, seizure and loss of consciousness⁴.

An awareness programme about hypoglycemia unawareness in Chennai, India stated that hypoglycemia is the most frequent and serious complication of insulin therapy and is three times more common in those who are intensively treated. Low blood glucose awareness training programme can help to identify and prevent hypoglycemia unawareness⁵.

Hypoglycemia may have serious consequence in terms of morbidity and mortality, occurring in the elderly diabetic patients, but this severe prognosis is less frequently observed. The rate of severe hypoglycaemia remains low, but increases rapidly in the very elderly and also with insulin therapy, as well as with unawareness of symptoms⁶.

OBJECTIVES

- To assess the level of pre-test knowledge regarding hypoglycemia and its management among diabetic patients.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding hypoglycaemia and its management among diabetic patients.

MATERIALS AND METHOD

- Research approach: The approach used in this study was quantitative approach
 - Research design: Pre experimental research Design.
 - Sample: 60 Diabetic clients
- Inclusion criteria: Diabetic clients :
- Who were able to read Malayalam and write Malayalam
 - Who were attending Non-communicable disease

clinics

Exclusion criteria: -Who were hypoglycaemic due to other causes

• Data collection instruments: Demographic proforma

: Structured knowledge questionnaire

• Description of tool:

Part 1: Demographic proforma

Demographic proforma included 6 items such as age, gender, food habits, family history of diabetes mellitus, previous knowledge on Hypoglycaemia and episodes of hypoglycaemia

Part 2: Structured Knowledge Questionnaire.

Structured knowledge questionnaire to assess the knowledge on Hypoglycemia and its management

Content validity: Items with a content validity index more than 90% were included in the tool. The reliability coefficient was 0.82 and was calculated by using Spearman's Brown Formula.

DATA COLLECTION PROCESS

The data was collected from 60 diabetic patients; those who are coming to community health centre and Non communicable disease clinics, selected by convenience sampling technique. Pre test was administered to each client followed by structured teaching programme aided by charts, Power point presentation, and flashcards to facilitate the better understanding of teaching. Teaching was carried out for 45 minutes. Method of instruction was lecture cum discussion. Post test was conducted using the same questionnaire on the seventh day of teaching.

DATA ANALYSIS

The investigator planned to analyze data by using both descriptive and inferential statistics.

RESULTS

Distribution of demographic characteristics

Among 60 respondents most of the subjects (31.7%) belonged to age group 41-50 years and they were females

(34%). About 55% subjects were having family history of Diabetes Mellitus. Majority (68%) of the study subjects had no episodes of Hypoglycaemia and most of the study subjects (83.3%) were having mixed food habits. Most of the subjects (95%) had no previous knowledge on Hypoglycemia.

Table 1: Frequency and percentage distribution of pre-test and post-test level of knowledge. n=60

Level of knowledge	Pre-test Knowledge score		Post-test knowledge score	
	Frequency	Percentage(%)	Frequency	Percentage(%)
Poor	27	45	3	5
Average	33	55	9	15
Good	0	0	48	80

In the pre-test majority of diabetic patients had average knowledge (55%) and (45%) had poor knowledge regarding Hypoglycemia and its management. But in post-test majority of the diabetic clients had acquired good knowledge (80%) and (15%) had acquired average knowledge.

Table 2: Median, Interquartile Range and Wilcoxon Signed Rank Test Of Pre-Test And Post-Test Knowledge Scores n=60

	Median	Quantities (Q1,Q3)	Minimum	Maximum	Wilcoxon Matched signed test
Pre-test	13	(8,16)	6	20	-6.74 (p<0.001)
Post-test	26	(22,28)	20	30	

Wilcoxon Matched signed Rank test was used to find the significant difference between pre-test and post-test knowledge score. There is a statistical difference in the average knowledge regarding Hypoglycemia after the intervention (p<0.001) Hence the intervention is found to be effective.

CONCLUSION

In pre-test, most of the diabetic clients (45%) had poor knowledge, 55% had average knowledge and none of them had good knowledge.

In post test, most of the diabetic clients (80%) had acquired good knowledge, 15% had average knowledge and 5% had poor knowledge.

The difference between pre-test and post-test knowledge scores was found to be statistically significant, which shows that structured teaching programme was effective in increasing the knowledge scores of diabetic clients.

Data collection process

Ethical clearance was obtained from the Institutional Review Board of Malankara Orthodox Syrian Church Medical College Hospital. Formal permission was obtained from the District Medical Officer and Medical officer of Community health centre. The data was collected from 60 diabetic patients, those who are coming to community health centre and NCD clinics, selected by convenience sampling technique keeping in mind the study criteria. NCD clinics were conducted on every Thursday at 2pm to 4pm. Subjects were asked to participate in the study after self introduction by the investigator. The patients were informed about the purpose of the study and their consent was attained. Pre test was administered to each client followed by structured teaching programme aided by charts, Power point presentation, flashcards to facilitate the understanding of teaching. Teaching was carried out for 45 minutes. Method of instruction was lecture cum discussion. After the teaching session, clients were free to clarify their doubts. Post test was conducted using the

same questionnaire on the seventh day of teaching.

Conflict of Interest: No conflict of interest exist in this study

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REFERENCES

1. Philip E C, Brain MF, International textbook of diabetes mellitus. 3rd ed. USA: John Wiley & Sons, Ltd; 2004:1082.
2. David KM. Management of Hypoglycemia during treatment of diabetes mellitus: 2008 May
3. The Juvenile Diabetes Research Foundation International, The American Diabetes Association (ADA), the NIDDK , The NINDS the NICHD and NASA. A workshop on Hypoglycemia and brain 2000 Sep:7-8
4. Altman JJ. Glycemic emergencies Rev Part 2007 Sep15:57(13):1446-54.
5. Meldanie MC, Evelyn MV, Theoretical basis for nursing 2nd ed. Philadelphia:J.B.lippincott company:2000
6. Anthony M. Treatment of Hypoglycemia in hospitalized adults Diabetes Educator 2007:33(4):709-15.