The efficacy of structured teaching programme on knowledge, practice, attitude and glycemic level of individuals suffering from type 2 diabetes mellitus at selected hospital, Tumkur

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ABSTRACT

Background of the study:

In today’s fast-paced life, the people manage to get everything early-information, money and even diseases. Industrialization, socio-economic development, urbanization, changing age structure, changing life style have placed India in a position where it is facing a growing burden of diabetes mellitus and being responsible for a major proportion of morbidity and mortality. India is currently experiencing an epidemic of type 2 diabetes mellitus and has the largest number of diabetic patients. At present India is considered as diabetic capital of the world. It is estimated that every fifth person with diabetes will be Indian and every fifth adult in Indian urban area is diabetic. Keeping in view the alarming increase in incidence and prevalence of diabetes in India, the WHO declared India as the ‘Diabetic Capital’ of the world. Increasing patient knowledge regarding diabetes and its complications has significant benefits with regard to patient compliance to treatment and to decreasing complications associated with diabetes. The real burden of the disease is however due to its associated complications which lead to increased in morbidity and mortality.

Awareness of various aspects of diabetes mellitus in the diabetic individuals is low. Diabetes care aims at improving the quality of life of individuals with type 2 diabetes through good glycemic control, control of risk factors, life style modification, prevent of complications and diabetes education. Diabetes education is the cornerstone of diabetes care.

Even after diagnosis, monitoring of diabetes is very poor. Most of the patients initially visits a doctor and then discontinue their therapy once their symptoms are controlled. Further,
more patients with poor control avoid insulin for fear of injection and belief of addiction of insulin. The health personnel could spare very limited time for their diabetic individuals and search for complications were ignored by most. By personal experience, the researcher found that the diagnosis of diabetes created anxiety and doubts among diabetics on how to adjust with restrictions imposed on them to control diabetes and diabetic individuals had inadequate knowledge about selection of diet, exercises and improving health status and preventing complications of diabetes.

AIM:
The aim of the study was to improve knowledge, practice and develop positive attitudes, and reduce blood glucose levels among type 2 diabetic individuals.

METHODOLOGY:
Quasi experimental design was used in which pretest post test design was adopted for the study.

The setting of the study was at Govt. District hospital, Tumkur. Type 2 diabetic individuals who fulfilled the inclusion criteria were considered as the population. The study consists of 200 samples, out of which 100 experimental group and 100 control group. Non probability purposive sampling was adopted to select the subjects. Those who are newly diagnosed as type 2 diabetes and admitted to the ward form sample for the study. In demographic data, age, gender, education, family income, residence, marital status, type of family food habits, smoking, alcohol, type of management year of diagnosis of type 2 diabetes were collected. Assessment of glycemic levels was done by taking Random Blood Sugar [RBS] through subject’s record [Through lab investigation]. The glycemic levels were categorized as 200-260 mg/d1, 261-320 mg/d1 and more than 320 mg/d1

To assess knowledge and practice the structured interview schedule was used. To ascertain attitude, the diabetes attitude scale was used. To assess glycemic levels [RBS] the patient clinical records were referred. The knowledge questionnaire consists of 85 items and practice questionnaire consists of 65 items. The knowledge scores were interpreted in the following, way below 50%, inadequate knowledge, 50-75% moderate knowledge and above
75%, adequate knowledge. The practice scores were interpreted in the following way below 50% poor practice, 50-75% moderate practice and above 75% good practice. The attitude scores were interpreted in the following way below 50% unfavorable attitude, 50-75% moderately favorable attitude and above 75% favorable attitude.

The score was converted into percentage by using the following formula

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\text{Percentage} = \frac{\text{Obtained Score} \times 100}{\text{Total Score}}
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Assessment of glycemic level was done by taking random blood sugar [RBS] through subjects’ record [through lab investigation]. The glycemic levels were categorized as 200-260 mg/dl, 261-320 mg/dl and more than 320 mg/dl.

Before collecting data prior permission was obtained from medical superintendent, Govt. District hospital, Tumkur and from study participants. The pretest was conducted to both experimental group and control group. Then the Structured Teaching Programme includes knowledge and practice, stress, life style modification, health maintenance which includes diabetic diet, exercises, rest and sleep, leisure activities, rest and sleep SMBG and urine test, food and skin care, uses of diabetes medication and weight reduction and also meaning, causes, clinical manifestation, patho-physiology, diagnostic procedures and complications of type 2 diabetes. The structured teaching programme was administered with A V aids and duration of structured teaching programme was 75 minutes. The SMBG, self insulin administration, diabetes exercises were shown through video clips. The control group was withheld from structured teaching programme and exposed to daily routine of the hospital. After 7 days of structured teaching programme post test was conducted for both experimental group and control group and the questionnaire used in pretest, administered in posttest.

RESULTS:
The study findings revealed that the two groups were homogenous with regard to demographic variables as analyzed by frequency and percentage calculation through coding and tabulation. The overall mean pretest knowledge scores of type 2 subjects was 29.90 with standard deviations 6.597 in experimental group and in control group 28.69 with standard deviation 6.195. It depicts the homogeneity of subjects in both experimental group and control group. Whereas overall mean posttest knowledge was 61.09 with standard deviation 6.034 in experimental group and in control group 29.01 with standard deviation 6.316. The overall mean pretest practice scores was 20.92 with standard deviation 3.72 in experimental group and in control group 20.98 with standard deviation 3.902. It depicts homogeneity of subjects in both experimental group and control group and the overall mean posttest practice scores was 53.48 with standard deviation 4.29 in experimental group and in control group overall mean post test practice scores was 2092 with standard deviation 3.90.

The pretest mean attitude scores obtained in experimental group was 97.16 with standard deviation of 3.41 and the posttest mean attitude scores was 112.33 with standard deviation 4.99. The pretest mean attitude scores in control group was 96.46 with standard deviation 1.29 and posttest mean attitude scores was 98.26 with standard deviation 2.32 in control group.

The pretest mean glycemic score obtained in type 2 diabetic individuals in experimental group was 267.17 with standard deviation 39.96 and posttest mean glycemic score was 243.47 with standard deviation 34.04. Whereas pretest mean glycemic score obtained by subjects control group was 297.16 with standard deviation 48.14 and posttest mean glycemic score was 290.75 with standard deviation of 45.23.

The findings reveals that the knowledge scores and practice scores of subjects in experimental group were increased significantly after STP whereas in control group there was no improvement. There was improvement in attitude scores of the subjects in experimental group and in control group there was no improvement in attitude scores of subjects. There was reduction in glycemic level of subjects in experimental group and there was no significant reduction in glycemic level of subjects in control group. The study shows the effectiveness of structured teaching programme in increasing the knowledge, practice and attitude scores and glycemic level of type 2 diabetes individuals. The Pearson’s correlation was used to find the
correlation between knowledge and practice, knowledge and attitude, knowledge and glycemic level of type 2 diabetic individuals.

There is a positive correlation between Pretest ($r=0.620$) and posttest ($r=0.655$) knowledge and practice scores of the type 2 diabetic individuals in experimental group and Pretest ($r=0.728$) and posttest ($r=0.716$) knowledge and practice scores in control group. There is no correlation between knowledge and attitude scores, knowledge and glycemic level, practice and attitude scores, practice and glycemic level of type 2 diabetic individuals in experimental group and control group.

Chi-square test was used to find the association between knowledge, practice, attitude and glycemic level scores with selected demographic variables. The subjects in the higher income ($P = 0.041$) group had more knowledge in pretest among experimental group and subjects residing in urban area ($P = 0.016$) had more knowledge in pretest among control group. The subjects belong to Hindu religion ($P = 0.045$), had completed their graduation ($P = 0.021$) and the subjects who eat non vegetarian food twice in a month ($P = 0.049$) had good practice in posttest among experimental group and married women ($P = 0.042$) had good practice in pretest among control group. The subjects in the urban area ($P = 0.004$) and subjects belong to nuclear family ($P = 0.002$) had favorable attitude in pretest among experimental group and teachers and professionals ($P = 0.018$) had favorable attitude in posttest among experimental group, whereas in control group the subjects aged less than 55 years had favorable attitude ($P = 0.0001$) in posttest. The subjects had the habit of fasting for religions purpose ($P = 0.016$) had good glycemic control in the posttest among experimental group.

**Conclusion:** The study concluded that structured teaching programme is effective in improving knowledge, practice and develop positive attitude and also reduce glycemic level of type 2 diabetic individuals.

**Key words:** Type 2 diabetic individuals, life style modifications, health maintenance behavior, stress, attitude, glycemic level and structured teaching programme.