ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 5, Issue, 05, pp. 4484-4486, May, 2015

International Journal of
DEVELOPMENT RESEARCH

Full Length Research Article

HEALTH EDUCATION PROGRAM TO MAINTAIN A REASONABLE BODY WEIGHT AND CONTROL OF BLOOD GLUCOSE LEVELS AMONG DIABETIC PATIENTS IN KHARTOUM DIABETIC CARE CENTERS

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ARTICLE INFO

Article History:
Received 14th February, 2015
Received in revised form
18th March, 2015
Accepted 30th April, 2015
Published online 31st May, 2015

Key words:
Diabetic Patients,
Non-Insulin-Dependent,
Body Weight,
Blood Glucose,
Educational Health Program.

ABSTRACT

Background: A total of 150diabetic patients were selected retrospectively from Khartoum State Diabetic Care Centers, this group divided to two equal groups, had been analyzed using the knowledge and practice of non-insulin dependent diabetes mellitus patients after implementation of health education program. Group (cases) the program was implemented and the other group was considered as a control (75 patients for each group).
Objective: The aim of the study to evaluate the maintain a reasonable body weight and control of blood glucose levels of non-insulin dependent diabetes mellitus patients after implementation of health education program.
Result: The finding of our study showed that the fasting blood sugar of the studied group was I59±15.7 mg/dl, and167±19.6 mg/dl, for the controls. A statistically significant difference between both means (t=2.76 & p-value <0.01). Post prandial blood sugar of the studied group was 217.8 ± 42.6 mg/dl while it was 221.00± 46.50mg/dl for the controls.
Total cholesterol of the studied group was 207.90 ± 49.80 mg/dl and 210.60± 37.50 mg/dl for the controls. Uric acid of the studied group was 5.30 ± 1.90 mg/dl while it was 4.70 ± 2.00 mg/dl for the controls. Urea of the studied group was 33.60 ± 7.60 mg/dl while it was 36.40 ± 10.20 mg/dl for the controls. Creatinine in control group was (0.98±0.02) statistically higher than the creatinine in the study group (0.92±0.02); (t=18.37 & p-value <0.001). No statistically significant was observed regard all laboraties between intervention and control groups expect creatinine but were 18.37, and fasting blood sugar 2.76 p <00.0.
The finding of our study showed the dietary practices among the studied patients before and after the program. 60% of our intervention group changed their diet immediately after the program. The most serious common improvement in the dietary practices of this study was in establishing and maintaining healthy dietary habits 90.7%. After 6 months there was a still higher significantly practices for the different aspects of the dietary management of diabetic mellitus than the pre-program level.
The finding of our study showed that the results of laboratory investigations among the studied group before and after the program. The fasting blood sugar decreased significantly from 159 ± 15.7 g/dl before the program to 120.6± 10.5 g/dl after the program and after 15 months. The post prandial sugar decreased significantly from 217 ± 42.6 g/dl before the program to 142.4 ± 14.3 g/dl after the program.
Conclusion: In this study population, the educational health program played an important role in maintain a reasonable body weight and control of blood glucose levels of non-insulin-dependent diabetic patients.

INTRODUCTION

Nutrition, diet, and weight control are the foundation of diabetes management. The most important objective in the dietary and nutritional management of diabetes is to control the total caloric intake to attain or to maintain a reasonable body weight and control of blood glucose levels. Success of this alone is often associated with reversal of hyperglycemia for obese diabetic patients (especially those with type II diabetes), weight loss is the key to treatment. It is also a major factor in preventing diabetes. In general, overweight, is considered to be a body mass index (BMI) of 25 to 29 %; obesity is defined as 20 % more than the ideal body weight or a BMI equal to or more than 30 kg, (National Institutes of Health, 2000). BMI is a weight-to-height ratio calculated by

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dividing body weight (in kilogram) by the square of the height (in meters). Obesity is associated with an increased resistance to insulin; it is also a main factor in type II diabetes. Some obese patient who have type II diabetes and who require insulin or oral agents to control blood glucose levels may be able to reduce or eliminate the need for medication through weight loss. A weigh loss of 10% of the total weight may significantly improve blood glucose levels. For obese diabetic patients who do not take insulin, consistent meal content or timing is not as critical. Rather, decreasing the overall caloric intake assumes more importance. However, meals should not be skipped. Pacing food intake throughout places more manageable demands on the pancreas long-term adherence to the meal plan is one of the most challenging aspects of diabetes management. For obese patients, it may be more realistic to restrict calories only moderately. For those who have lost weight, maintaining the weight loss may be difficult. To help these patients incorporate new dietary habits into their lifestyles, diet education, behavioral therapy, group support, and ongoing nutrition counselling is encouraged, (American Diabetes Association, 2003).

However, achieving this goal is not always easy. Because nutritional management of diabetes is so complex, a registered dietitian who understands diabetes management has the major this aspect of the therapeutic plan. However, the nurse, and all other members of the health care learn, needs to be knowledgeable about nutritional therapy and supportive of the patient who needs to implement dietary and lifestyle changes on the Diagnosis and Classification. Nutritional management of the diabetic patient includes the following goals, (American Diabetes Association 2003). The British Diabetic Association recommends that every person with diabetes should have access to a state of registered dietitian for individual assessment and for specific dietary advice but in practice, it is the nurse who may have more regular contact with the diabetic person, the nurse is the person who plays a significant role in reinforcing diabetic goal. The dietary guideline for Americans give advice on how to choose a diet that provides sufficient nutrition to promote health and limit excessive intake of nutrients associated with chronic disease. This recommendation helps people to implement the dietary guidelines, (Moustafa, 1994, and Drass&. J'eterson, 1996).

MATERIALS AND METHODS

This is a descriptive study to evaluate the maintain a reasonable body weight and control of blood glucose levels of non-insulin dependent diabetes mellitus patients after implementation of health education program. The study conducted in Khartoum State Diabetic Care Centers during the period from January 2014 to March 2015. 150non- dependent diabetic patients, all originating from the Sudanese, were eligible for analysis. Patients were divided equally to two groups. One group was considered as the study group (cases) and the other group was enrolled as control group (non-cases).

The following variable analyzed: Dietary practices, fasting blood sugar prandial blood sugar, total cholesterol were collected by a structured questionnaire.

Ethical considerations: The aims methods of this study are fully explain to the patients and their consent to participate in this study is obtain. The questionnaire filled in the presence of patient; the results of biochemical shown and discussed with the patients.

Statistical analysis: Data will be analyzed using SPSS program.

RESULTS

The finding of our study showed that the fasting blood sugar of the studied group was I59±15.7 mg/dl, and167±19.6 mg/dl, for the controls. A statistically significant difference between both means (t=2.76 & p-value <0.01). Post prandial blood sugar of the studied group was 217.8 ± 42.6 mg/dl while it was 221.00± 46.50mg/dl for the controls. Total cholesterol of the studied group was 207.90 ± 49.80 mg/dl and 210.60± 37.50 mg/dl for the controls. Uric acid of the studied group was 5.30 ± 1.90 mg/dl while it was 4.70 ± 2.00 mg/dl for the controls. Urea of the studied group was 33.60 ± 7.60 mg/dl while it was 36.40 ± 10.20 mg/dl for the controls. Creatinine in control group was (0.98±0.02) statistically higher than the creatinine in the study group (0.92±0.02); (t=18.37 & p-value <0.001). No statistically significant was observed regard all laboraties between intervention and control groups expect creatinine but were 18.37, and fasting blood sugar 2.76 p <00.0.

Table 1. Laboratory investigations among of the non-insulin dependent diabetic patients before the program intervention (n=150)

Laboratory Investigation	Intervention N=75	Controls N=75	X2	P-value
	Mean± SD	Mean± SD		
Fasting blood sugar	159.00±15.70	167.00±19.60	2.76	0.007*
Post prandial blood sugar	217.80±42.60	221.00±46.50	0.44	0.661
Total cholesterol	207.90±49.80	210.60±37.50	0.38	0.708
Uric acid	5.30±1.90	4.7±2.00	1.88	0.062
Urea	33.60±7.60	36.40±10.20	1.91	0.059
Creatinine	0.92±0.02	0.98±0.02	18.37	0.000*

(*) Statistically significance

The finding of our study showed the dietary practices among the studied patients before and after the program. 60% of our intervention group changed their diet immediately after the program. The most serious common improvement in the dietary practices of this study was in establishing and maintaining healthy dietary habits 90.7%. After 6 months there was a still higher significantly practices for the different aspects of the dietary management of DM than the pre-program level. The finding of our study showed that the results of laboratory investigations among the studied group before and after the program. The fasting blood sugar decreased significantly from 159 ± 15.7 g/dl before the program to 120.6± 10.5 g/dl after the program and after 15 months. The post prandial sugar decreased significantly from 217 ± 42.6 g/dl before the program to 142.4 ± 14.3 g/dl after the program.

DISCUSSION

The main goals of diabetes treatment are to achieve metabolic control as near normal as -possible and to prevent or delay the onset of complications. This is achieved by lowering blood

glucose by diet alone or by diet and oral hypoglycemic agents or diet and insulin besides the exercises. Therefore, the sole responsibility for management depends primarily on the patients; therefore they should be assisted by health care providers to understand the nature, treatment of the disease and the prevention of complications, (Hedges, 1994). Regards the knowledge of the two groups (intervention and control) about different aspects of diabetes, finding revealed that the majority of both groups had incorrect knowledge. This findings supported by, (Brown, 1999) who found that diabetic patients didn't always have the knowledge or ability to manage their own illness. Additionally this result similar to Akel and Hamedeh (1999) stated that patient with no knowledge about dietary control; exercise or foot care had poor self-care practices.

Conclusion and Recommendation

Their findings will provide us with greater insight into improving knowledge and practice of non-insulin dependent diabetes mellitus patients after implementation of health education. Recommended the importance of special diet in health maintenance, demonstrating easy and economical way to select and prepare food should be presented to diabetic septic foot patients. Further innovative studies with larger sample sizes are needed to examine how the status of this potentially modifiable health education program and non-insulin dependent diabetes mellitus patients. Lastly, we recommend further studies in this field with wider scope.

Acknowledgement

Authors acknowledge the great help received from the scholars whose articles cited and included in references of this manuscript.

The authors are also grateful to authors / editors / publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed. Authors are grateful to International Journal of Development Research Journal editorial board members and International Journal of Development Research Journal team of reviewers who have helped to bring quality to this manuscript My thanks to all people who helped me and I may miss to say their name.

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