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Research Article
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Role of Education of Diabetes to Controlling Plasma Glucose, Urea, Creatinine, Uric Acid in Central Hospital Nampula

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Abstract:

Modern approaches to diabetes primarily rely upon dietary and lifestyle management, often combined with regular ongoing blood glucose level monitoring. The diabetic education is a fundamental requirement of management of non-pharmacological treatment of diabetes. Medication alone not able to control diabetes. There should be patient behavior changed from continuing learning about diet, physiology, continues learning, preventive management of complication of diabetes, knowledge of diseases, self-managing small problem and inform to medical staff, use information technology . There is fast and gradually increasing number of patients with diabetes in Mozambique due to a pattern of poor dietary habits, sedentary lifestyle, urbanization, obesity, and the use of traditional healers for the treatment of diabetes, which leads to complications such as diabetic foot and the amputation of feet. Another common factor to complication diabetes is the impact of the antiretroviral drugs used to treat HIV on diabetes. Diabetes education was performed with general and specific groups of patients according to the needs of the patients, the complications of the diabetes mellitus and other diseases associated with them. Three education sessions were organized at central hospital Nampula at an interval of one month (baseline, first follow up and second follow up). Each participant was evaluated in each session regarding their plasm glucose, uric acid, and creatinine and urea concentrations. The statistical analysis showed strong significantly correlation positive effects on controlling each of these parameter.

Introduction:

1. Background:

Bradley, Anderson, Day, and Fox (Day et at., 2004), have provided recent focus on the psychological influence on diabetes education and better outcomes More recently, significant work in diabetes education, including some attention to, psychological influences.

DCCT (Diabetes Control and Complications Trial) and the in UKPDS (United Kingdom Prospective Diabetes Study 1993) have been emphasized role of education in controlling diabetes and better outcomes. It has even been suggested that educational methods may have played key roles in some of the outcome gains seen in the landmark intervention studies of the DCCT (Diabetes Control and Complications Trial) 2 and the UKPDS (United Kingdom Prospective Diabetes Study, *Diabetology*. 1983).

Patients not only gain comprehensive knowledge of diabetes to control diabetes, but also make the

decision to attempt to prevent complications and the decision to reduce risk in order to gain optimized health. There is a need long term education program for diabetes patients to improve outcome of control of diabetes. Optimal diabetes management requires patients to actively participate in their care, which occurs most effectively with a multidisciplinary team. Diabetes education is an integral part of this team approach because it not only helps the patient understand diabetes, its progression, and possible complications, but also provides guidance and encouragement to the patient to engage in proactive risk-reduction decisions for optimal health. (Kent et al., 2013a)

Materials and Method:

A sample of 648 participants was taken for this study. This study was conducted on regular patients of the diabetic outpatient department of the Central Hospital of Nampula.

The study investigated the effects of three sessions of the diabetes education program (baseline, first follow-up and second follow-up) on each patient at one-month intervals. The inclusion criteria for participating in the diabetes education program dictated that patients should be in the OPD, willing to participate in the education sessions and willing to give consent to be included in the study. Participants were excluded if they had already completed three sessions of education or if they lived in a district that made it impossible for them to return within one month to the next education session. Among the group instructors were a dialectologist, dietician, psychologist, physiotherapist, and diabetic nurse. There were various variables to assess from baseline to second follow up education session.

The topics of education were chosen according to the local culture, socioeconomic condition, beliefs, lifestyle, and common complications and their associated diseases to improve the outcome of diabetes and to prevent complications.

Plasma Urea, creatinine, uric acid, plasma glucose were taken before each session, and each patient was asked to do an analysis before day one of the session and provide the results of the plasma gucose, urea, creatine, uric acid report to be registered by a diabetes nurse. There was an interval of one month between each session and three educational sessions. All of the educational sessions were verbal, demonstrated real activity, and were made available in the Portuguese language.

A statistical analysis was conducted. The Statistical Program for the Social Sciences (SPSS), version 17.0, was utilized.

Organization of education sessions:

Among the group instructors were a diabetologist, dietician, psychologist, physiotherapist, and diabetic nurse. The following tasks had to be performed before each of the sessions:

The baseline session:

The diabetic nurse took consent and accessed the patient's clinical history before conducting a physical examination that included checking vital signs,. The physical examination was to be done by a physician. They also noted the results of a blood analysis that tested for plasma glucose, uric acid, creatinine, and urea, which had been conducted 2-3 days prior to the education session.

First follow up:

At the beginning of the session, the diabetic nurse measured the and noted the results of the blood analysis that tested for plasma glucose, uric acid, creatinine, and urea, which had been conducted 2-3 days prior to the education session. The physicians and other specialists also noted the relevant patient information.

Second follow up:

At the beginning of the session, the diabetic nurse measured the and noted the results of the blood analysis that tested for plasma glucose, uric acid, creatinine, and urea, which had been conducted 2-3 days prior to the education session. The physicians and other specialists also noted the relevant patient information

. Results:

Table: 1 Correlation among variables plasma glucose and uric acid

Correlations							
		1	2	3	4	5	6
1	Glucose baseline						
2	Glucose1st FU	.448**					
3	Glucose2nd FU	.357**	.500**				
4	Uric_acid baseine	-.254**	-.311**	-.322**			
5	uric_acid 1st U	-.243**	-.248**	-.322**	.559**		
6	Uric_acid 2nd FU	-.256**	-.276**	-.323**	.506**	.603**	
N=648	** Correlation is significant at the P<= 0.01 level (2-tailed).						

Table: 2 Correlation among variables plasma glucose and urea

Correlations							
		1	2	3	4	5	6
1	Glucose baseline						
2	Glucose 1st FU	.448**					
3	Glucose 2nd FU	.357**	.500**				
4	Urea baseline	-0.001	0.035	0.002			
5	Urea 1st FU	-0.034	0.003	-0.069	0.113		
6	Urea 2nd FU	-0.114	-0.149	-0.016	0.038	.615**	
N=648	** Correlation is significant at the P <=0.01 level (2-tailed).						

Table: 3 Correlation among variables plasma glucose and creatinine

Correlations							
		1	2	3	4	5	6
1	Glucose baseline						
2	Glucose 1st FU	.448**					
3	Glucose 2nd FU	.357**	.500**				
4	Creatinine baseline	-0.064	-0.083	-0.096			
5	Creatinine 1st FU	-0.083	-0.059	-.117*	.688**		
6	Creatinine 2nd FU	-0.055	-0.095	-.125*	.360**	.281**	
N=648	** Correlation is significant at the P<= 0.01 level (2-tailed).						
	* Correlation is significant at the P<=0.05 level (2-tailed).						

Discussion:

The present study found that educational intervention was highly effective in controlling diabetes. Metabolic control (plasma glucse, urea, creatinine and uric acid concentrations) also showed a significant positive improvement from baseline at the second follow up visit. and change their lifestyle, especially their dietary and exercise habits, their psychological adjustment and their attitude to living with diabetes.

Meta analyses and the outcome of various studies have shown positive impacts after receiving diabetes education, and enhanced knowledge of diabetes has been presented by Ricci-Cabello et al. (2014). In order to promote diabetes awareness, self-care behaviors can be useful. Choi et al. (2016) described innovative strategies for the improvement of diabetic control and glycemic improvement in Chinese patients through the continuing education of diabetes mellitus during patient examination and by increasing family involvement via diabetic knowledge.

Mollaoğlu et al. (2009) emphasized repeated diabetic education sessions to control and improve metabolic parameters. Salinero-Fort et al. (2011), using experimental and control groups regarding diabetes education.

Conclusion:

There were positive strong correlation among plasma glucose to urea. Creatinine and uric acid. The glucose controle improves kidney fuctions I diabetic patients.

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