IMPACT OF KNOWLEDGE ON DIETARY CONTROL OF TYPE 2 DIABETES MELLITUS IN KHARTOUM STATE

Maha Bushra Hamed

Saudi German Hospital Group,
Department of Dietetic,
P.O. Box 2550, Saudi Arabia
E-mail: mahdiet1972@hotmail.com

ABSTRACT

Purpose: Diabetes mellitus is a global health problem with high prevalence worldwide. It is estimated to affect 4.4% of the global population by 2030. Proper care of diabetes is essential and patient's knowledge is vital as diabetes healthcare is primarily self-care. The main objective of this study is to explore the effect of dietary knowledge on the control of type 2 diabetes mellitus. 150 respondents were selected randomly from public and private clinics in Khartoum State.

Findings: A strong negative relationship was found between age and level of knowledge. 32% of the respondents were found to be highly educated. A positive relationship was found between the level of knowledge, education and income. There is ignorance of the role of dieticians in Diabetes management.

Methodology: Data was collected through a questionnaire which included demographic data, medical information and dietary patterns. Level and source of knowledge were assessed. Blood sugar was measured using the glucometer and tested against the level of knowledge (SPSS, version 11) used for analysis.

Conclusion: The study emphasises the role of dieticians in dietary control of type 2 diabetes mellitus,

including educating poor families on the cheap, nutritive food available as well as in explaining the glycemic index of some local and indigenous Sudanese foods.

Keywords: diabetes mellitus type 2; dietary control; knowledge.

INTRODUCTION AND LITERATURE REVIEW

Diabetes mellitus is a global health problem which estimated to affect 6–10% of the humanity. The prevalence of the disease increases with age, with about 50% of the cases occurring in people older than 55 years of age.

During the last quarter-century, there has been a revolution in both health and information technology. However, by no means has every one benefited from the overall trend of increased life expectancy, or from that of increasing knowledge and its communicability.

This gap goes beyond the notion of the 'digital divide'. It is a 'Knowledge divide' in which large sections of humanity are cut off not just from the information that could help them but from any learning system or community that fosters problem solving (Algamdi, 2001).

METHODOLOGY

Sampling

A total of 150 diabetic patients (type 2) were selected randomly from different hospitals (private and government) and from health clinics in Khartoum State.

Data collection consisted of two parts; (*Instrument*): A questionnaire in which each diabetic patient was answered according to his/her own will without any outside interference and (*Random blood sugar test*) was obtained to determine the level of control of each individual depending on the five categories given below.

The data was analysed statistically by using SPSS program version 11, and the results presented in tables, figures and charts.

Table 1 Categories determine the level of blood sugar control

Blood Sugar (mg/dl)	*Level of Control*
⩽140 mg/dl	Optimal control
141 mg/dl–160 mg/dl	Good control
161 mg/dl–180 mg/dl	Acceptable control
181 mg/dl–200 mg/dl	Poor control
>200 mg/dl	Very poor control

Source: Mahanand Stamp (2000).

RESULTS AND DISCUSSION

Around one fifth of the sample (19.3%) was below age 36 years. The majority of the samples (68.7%) were between 36 and 64 years old which is the normal age for type 2 diabetes patients (Mahan and Stamp, 2000).

Educational level of a diabetic patient is usually considered to be the most important factor influencing the dietary control and enhancing the patient's ability to get dietary knowledge from different sources (Al-Nuaim et al., 1998). This is in line with the study findings that the majority of participants (68%) ranged from being illiterate to having secondary education and only one third of the participants (32%) had university or post-graduate education.

Income per month is an important factor that may influence diabetes control as income may limit the type and amount of food consumed per day.

About 45.3% were found to be obese and most of them (88%) were found to range between being overweight, obese and morbid obese. This may be the main reason for having diabetes mellitus (Mahan and Stamp, 2000).

Three quarters ofthe participants (77.3%) noticed that there were developments in dietary treatment of diabetes mellitus.

About 30–40% of diabetic patients can live normally without medication if they control their diet (Craig et al., 1998). Unfortunately, very few (0.7%) and (2.7%) of the participants follow a diet or exercise to control their disease and nearly half (44.7%) of the participants used medication to control their disease.

Majority (76.7%) of the participants did not give any importance to the role of dieticians in controlling diabetes and the fluctuation of blood sugar and this was mainly due to low economical status and level of education (Algamdi, 2001). Furthermore, the majority (84.7%) of the participants did not maintain regular follow-ups with the dieticians.

Although starch is rapidly metabolised into 100% glucose during digestion and raises blood sugar (Bennion, 1979) it was found that, in this study, less than two thirds (62.7%) of the respondents take more than the daily recommended allowances of it.

Majority of the respondents (93.3%) have current knowledge about the importance of vegetables in the diabetic diet and that consumption of vegetables is good for both hunger satiety and in slowing the absorption of the glucose from intestine (Peckenpaugh and Poleman, 1999).

Table 2 Educational level of participants

Level of education	*Percentage*
Illiterate, Literacy class, Primary, Intermediateand Secondary	68.0
University andPost-graduate	32.0

Source: Study Data.

About (88%) of participants were found to take meat, fish or chicken on a daily basis and this is good as diabetic patients (type 2) have an increase need for protein during moderate hyperglycemia and an altered adaptive mechanism for protein sparing during weight loss (Henry, 1994).

CONCLUSIONS

This study showed that type 2 diabetes mellitus was high among the age group (46–55) years old. 53.3% of the respondents of this study were male. Most of the respondents (74.7%) were found to use oral hypoglycemic agents. Furthermore, most of them were found to be obese or overweight. There was some statistical positive relationship found between the respondents' dietary knowledge level and variables such as level of education and income.

Age was found to negatively impact the respondent's level of knowledge. Sources of dietary advice were found to be mainly from doctors and sometimes through social communication with friends, neighbours, etc.

The majority of the respondents were found to get dietary information through television or radio, which seem to be suitable channels to convey dietary messages for diabetic patients in the future.

RECOMMONDATIONS

- Emphasise the role of the dietician in providing dietary advice and in helping patients with diabetes mellitus.
- Expand the use of mass media (television, radio) to send dietary messages to the target group (diabetic patients).
- Introduce nutrition education in school curriculum.
- Organise nutrition education campaigns to encourage the application of dietary advices to control diabetes mellitus.
- Educate poor families on cheap, nutritive sources of food available for diabetic patients.

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BIOGRAPHICAL NOTES

Maha Bushra Hamed was born in Sudan 1972 and has been residing in Saudi Arabia since 1995. She holds a PhD in Human Nutrition from Ahfad University for Women in Sudan 2009, joining the Saudi-German Hospital Group as a head of the Dietetic Department in 2001. She has taught a number of courses on food and Nutrition at Al-Batterjee Medical College. Her current concern and interests include nutrition therapy for obesity and diabetes in both adult and adolescents.