

KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING PHYSICAL ACTIVITIES AMONG PATIENTS WITH TYPE 2 DIABETES

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ABSTRACT

Background: Aging population, urbanization, dietary habits rich in carbohydrate, sedentary lifestyle, obesity and stress have contributed immensely to the increased prevalence of diabetes in our country. Diabetes is one of the main non communicable diseases that can be prevented by lifestyle modification. However, it has been a difficult and a challenging task to give the necessary health education in an effective manner and getting them to adhere to the recommended lifestyle modification. Objective of this study was to assess knowledge, attitudes and practices regarding physical activities among patients with type 2 diabetes; attending General Practice clinics in the district of Colombo.

Methods: A descriptive cross sectional study was conducted, using 453 patients with type 2 diabetes attending fifteen general practice clinics in the district of Colombo. Thirty consecutive patients were selected from each randomly selected general practice clinic. Patients with type 2 diabetes, between 15-69 years of age, who have been attending the general practice clinic for more than three months, were selected for the study. All pregnant mothers and diabetics secondary to other illness were excluded. Data collection was done using a validated, pre tested, interviewer administered questionnaire. Data analysis was done using SPSS statistical analysis package and comparison of continuous variables was done using student's t test and the categorical variables were tested using chi-square test.

Results: Mean age of the population was 56.5 years (± 10.22) and 68.9% (n=312) of the subjects were females. Majority (79.5%) of patients in the study population were educated on the importance of physical activities and it was delivered mainly by the doctors (72.4%, n=328). However, most of the patients (58.3%, n=264) did not have adequate knowledge regarding physical activities. Although the knowledge was poor, the majority (77.9%, n=353) were having active lifestyle with adequate levels of physical activity with their daily activities.

Conclusions: The majority of the patients did not have adequate knowledge regarding physical activities. Despite their poor knowledge, majority had adequate level of physical activity with their daily activities.

Key words: Knowledge; attitudes; practices; physical activities; type 2 diabetes; general practice clinics

INTRODUCTION

Diabetes mellitus (DM) constitutes an important global health problem, which contributes to high disease burden with regard to morbidity, mortality and impaired quality of life. DM was traditionally considered as a disease among affluent people in the developed world. However, with the epidemiological transitions that have occurred during last two decades, DM has become a global pandemic with majority (2/3) of the diabetic population living in the developing countries (1). Epidemiological studies on Sri Lankan population during last two decades have shown a definite upward trend in the prevalence of DM (2-4). A prevalence study done in 2006, has shown that the current diabetes prevalence among adult Sri Lankan population is about 10.3%. One in five adults in Sri Lanka has either diabetes or pre diabetes and one third of those with diabetes are undiagnosed. Diabetes prevalence was higher in the urban population compared with the rural population (16.6% Vs 8.7%). The prevalence of overall, urban and rural pre diabetes was 11.5%, 13.6% and 11.0% respectively. Overall 21.8% had some form of dysglycaemia. The projected diabetes prevalence for the

year 2030 is 13.9 % (4). According to recent studies, Sri Lanka is among the countries with highest diabetes prevalence rates in the world (1). Demographic transition with increased elderly population, urbanization, dietary habits rich in carbohydrate, sedentary lifestyle, obesity and stress have contributed immensely to increased prevalence of diabetes in our country (5).

Non communicable diseases like cardiovascular diseases, diabetes, cancer and chronic pulmonary diseases have become a big burden to the health care system of our country. Eighty percent of heart diseases and strokes, 80% of Type 2 Diabetes and 40% of cancers can be prevented by; Healthy diet, Physical activity, Stopping smoking and alcohol. One hundred and fifty (150) minutes of moderate physical activity per week or its equivalent is estimated to reduce risk of ischemic heart disease by 30%, risk of Diabetes by 27% and risk of breast and colon cancers by 21-25% (6). An effective method of health education is essential to educate people regarding the importance of life style modifications in order to prevent these diseases.

Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure (7). Exercise, is a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective. Physical inactivity (lack of physical activity) has been identified as the fourth leading risk factor for global mortality (6% of deaths globally) (7).

Despite having enough evidence to support the benefits of physical activities, initiating and maintaining regular exercise has become a difficult task (8). People in different communities have different individual, socio-cultural and environmental reasons and barriers that hinder the adherence to regular exercise. Level of education and the level of understanding regarding the importance of physical activity is an important determinant for compliance to exercise (9, 10). Lack of interest (9, 11), lack of time (9) and physical limitations (10, 12) are important patient factors. Lack of social support (12) is another important factor especially for elderly patients. Availability and accessibility to a proper place where the physical activity can be carried out is another important environmental barrier (11).

The degree of knowledge regarding physical activity, attitudes towards exercises, exercise practices and the factors that influence exercise practices among Sri Lankan diabetic patients are not known well. The aim of our study was to gather more information about the Sri Lankan situation; which will be useful for healthcare providers for any necessary interventions to improve physical activities among patients with diabetes.

METHODS

A cross sectional descriptive study was conducted in fifteen randomly selected general practice clinics in the district of Colombo. Type 2 diabetic patients, between 15 - 69 years of age, who were diagnosed according to World Health Organization (WHO) diagnostic criteria and attending the selected general practice clinics for more than three months, were selected for the study irrespective of sex and type of treatment. Diabetes secondary to other illnesses, pregnant mothers and those who were not willing to participate were excluded from the study.

Sample size was calculated using the Lwanga and Lemeshow formula. According to the formula, sample size was 384. An additional 10% was added to compensate for non-responders and final sample size was rounded off to 450. Thirty patients were selected consecutively from each general practice clinic according to inclusion and exclusion criteria.

A pretested, interviewer administered questionnaire was used as the study instrument, which was developed after extensive literature review and obtaining the opinion of the experts in the relevant field. The questionnaire

consisted of six components to collect personal data and socio-demographic features, to assess knowledge; attitudes and practices regarding physical activities, to find out reasons for not engaging in physical activities and anthropometric measurements and latest fasting blood glucose value. Short version of international physical activity questionnaire (IPAQ) which was translated to Sinhala and validated for Sri Lankan adults by a validation study conducted by Arambepola C (13) was used to assess the level of physical activity. Weight was measured in kilograms using a standardized electronic weighing scale; without shoes and wallet; to the nearest 100 grams. Heights of the participants were measured using a standard measuring tape to the nearest 0.1 cm; with the patient standing on a flat floor with his/ her heels, buttocks and shoulder in contact with the wall. Body mass index (BMI) was calculated by dividing the weight of the patient in kilograms by the square of the height in metres.

Data collection was done by two pre-intern doctors using the interviewer administered questionnaire. They were trained by Principal Investigator (PI) to gather unbiased data. Permission was taken from the respective general practitioners to conduct the study at their clinics. Participants were explained about the purpose of the study through an information sheet and clarifying their queries. Written informed consent was obtained from each participant before collecting their data. After completion of the questionnaire, a health education leaflet containing information on physical activities was given to the participant.

The analysis of data was done by using SPSS statistical package 15.0. Twenty questions were included to assess knowledge and a score was given; based on which two categories were considered as poor and good knowledge. Six questions were included to assess attitudes and each attitude was analysed separately and described individually. Analysis of physical activity was done according to the guidelines for data processing and analysis of the IPAQ. Three levels of physical activity were proposed as low, moderate and high; moderate and high levels were considered as adequate level of physical activity.

Frequency distributions and cross tabulations were done to illustrate results according to specific objectives. Comparison of continuous variables was done using student's t test and categorical variables were tested using chi-square test.

Ethical approval for the study was obtained from ethics review committee, Faculty of Medical sciences, University of Sri Jayewardenepura.

RESULTS

Sample size of the study was 453, of which 68.9% (n = 312) were females. The mean age of the population was 56.55 years (± 10.22) and majority (48.1%, n = 218) were between 60 - 69 years, 1.5% (n = 7) were below

30 years of age. Majority of the population (55.4%, n = 251) were educated above GCE O/L. Monthly income of the majority (60.3%, n = 273) were below Rs 10 000. Mean age at the diagnosis of Diabetes mellitus was 49.9 years (± 10.91) and mean duration of treatment was 7.8 years (± 6.88).

Although majority (79.5% n = 360) of patients were educated on the importance of physical activities, their knowledge regarding physical activities were poor among most of these patients (58.3%, n = 264) (Table 1). Only 7.9% (n = 36) of patients knew the minimum recommended duration and frequency of exercise for a patient with diabetes.

Table 1: Distribution of the study population according to the level of knowledge on physical activities (n=453)

Level of knowledge	Frequency	Percent	Cumulative percent
Very poor knowledge	63	13.9	13.9
Poor knowledge	201	44.4	58.3
Good knowledge	169	37.3	95.6
Very good knowledge	20	4.4	100.0
Total	453	100.0	

The main source of information of the study population was Doctors. 72.4% of the patients have been educated on the importance of physical activities by doctors while 28.3%, 25.4% and 10.6% by Media, nurses and educational leaflets respectively. According to the results, family doctors have educated 67.3% (n = 305) of patients regarding physical activities and 55.2% (n = 250) of patients have been educated regarding recommended duration and type of physical activities by them.

Knowledge regarding physical activities was better in those who were 60 years or less than those who were more than 60 years (t = 3.472, df = 451, p < 0.05). Knowledge regarding physical activity was better in males than females (t = 3.45, df = 451, p < 0.05). Those who have studied above GCE O/L had a better knowledge than those who have studied up to O/L (t = 4.746, df = 451 p = 0.000).

According to the findings of the study, 95.1% (n = 431) of patients believe that exercise is as equally important as drugs and dietary control in the management of diabetes. 67.3% of patients (n = 395) believes that not only obese

patients, but all should do exercise. The percentage of patients who believe that doing house hold activities is not adequate as a form of exercise is 52.1% (n = 236). Fifty point six percent (n = 229) believes that they should continue exercise even after achieving the target body weight. Only 43.7% (n = 198) believes that patients on insulin should do exercise while only 44.85 (n = 203) believes that diabetics with hypertension should also do exercise.

According to the findings of the study, 79.0% (n = 353) engage in moderate intensity physical activities, while 30.9% (n=140) engage in vigorous physical activities. Percentage of patients who walk at least 10 minutes per day is 62.7% (n = 284) (Table 2). Seventy seven point nine percent (n = 353) has an adequate level of physical activity and 22.1% has an inadequate level of physical activity (Table 3). There is a significant difference in knowledge regarding physical activities, between the two groups with adequate level of physical activity and inadequate level of physical activity (t = 4.864, df = 451, p = 0.000).

DISCUSSION

According to the results, the majority of the patients were educated regarding physical activity. However, most of the patients did not have an adequate knowledge regarding physical activities and only a minority (7.9%) knew the minimum recommended duration and frequency of exercise for a patient with diabetes. The majority believed that exercise is as equally important as drugs and dietary interventions in the management of diabetes reflecting a positive attitude towards exercise. Even without having an adequate knowledge regarding physical activity, most of our patients seems to be physically active during their daily activities and seems to be getting the required amount of physical activities without their knowledge.

Our survey showed that most of our patients are being educated by the health care professionals regarding physical activity. However, the knowledge regarding physical activity is poor among patients with diabetes, reflecting the degree of communication gap between the health care professionals and the patients in our practise. This highlights two problems in our health education practises One is the effectiveness of the health care messages given by the health care professionals and secondly the level of health literacy of our patients. Although the patients had a positive attitude towards exercise, the health care professionals have not been able to capitalize on that and deliver adequate amount of information in an effective manner. Increased number of patients and the limitation of time for the consultation could have been the main reasons for these communication deficiencies. Knowledge deficiencies among health care professionals could have been the other reason. These deficiencies highlight the importance of having a training programme for training and educating health care professionals regarding lifestyle interventions related to diabetes. On the other

Table 2: Distribution of study population by type of physical activity involved (n=453)

Type of physical activity	Response	Frequency	Percent	Cumulative percent
Vigorous physical activity	Yes	140	30.9	30.9
	No	313	69.1	100.0
	Total	453	100.0	
Moderate physical activity	Yes	358	79.0	79.0
	No	95	21.0	100.0
	Total	453	100.0	
Regular walks	Yes	284	62.7	62.7
	No	169	37.3	100.0
	Total	453	100.0	

hand, there seem to be a problem of grasping most of the information that are given for the patients as health messages. Although we consider our population as literate, our patients may be having a problem in understanding complicated health information and highlight the need for simplified ways of delivering health information to these patients.

Majority of patients believed that exercise is as equally important as drugs and dietary control in the management of diabetes. This is a very good trend. Majority of patients believed that not only obese patients but others also should do exercise. Fifty two point one percent of patients believe that doing household activities is not adequate as a form of exercise. The positive attitude that doing household activities is not adequate as a form of exercise has a positive effect on involving in leisure time physical activities. Health care professional should utilize this positive attitude of patients to their advantage and find way to capitalize on that when delivering health information to the patients. Doctors being the main source of information to patients can play a significant role in improving patients' knowledge and attitude regarding physical activities of these patients.

According to our study, the majority of patients had an adequate level of physical activity even though only a minority knew the correct duration and number of days that they should engage in moderate to vigorous physical activities. Most of these patients were engaged in moderate physical activities like gardening, washing clothes, washing a vehicle, sweeping, bicycling slowly, swimming slowly, lifting/carrying light weight and outdoor sports. In the study population, 62.7% of patients had engaged in regular walk either during leisure time or at

home or while travelling and 30.9% had engaged in strenuous physical activities like heavy work, lifting heavy weight, digging, chopping woods, running, bicycling fast, swimming fast, climbing stairs or a mountain. These findings highlight the fact that our patients are still having active lifestyle. However, with the economic development, we are experiencing a dramatic change with the lifestyle of our people that facilitate more sedentary behaviour, where we could anticipate more problems in future.

Table 3: Distribution of study population by level of physical activity (n=453)

Type of physical activity	Frequency	Percent	Cumulative percent
High level of activity	168	37.1	37.1
Moderate level of activity	185	40.8	77.9
Low level of activity	100	22.1	100.0
Total	453	100.0	

CONCLUSIONS

According to our study, the majority of the patients did not have adequate knowledge regarding physical activities.

Despite their poor knowledge regarding exercise, majority had an adequate level of physical activity during their daily activities. The patients have a positive attitude towards physical activity and the health care professionals should find ways to optimally utilize this positive attitude when educating patients on physical activity.

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