RESEARCH STUDY

KCMJ 2013; 9(2): 25-28

*Maral F Thabit (FICMS) [a]

Awareness Regarding Diabetes Mellitus and Its' Complications in Type 2 Diabetic Patients

ARTICLE INFORMATION

Authors addresses:
[a] Institute of Medical Technology
*Corresponding Author
E-mail address:
maral.fthabit@yahoo.com

Article history:
Received; February, 12, 2012.
Revised form; March, 2, 2013.
Accepted; March, 10, 2013.

Keywords:
Awareness
Diabetes Mellitus
Complications

ABSTRACT

Background: Various studies conducted in many parts of the world suggest that there is lack of public awareness and knowledge of various aspects related to diabetes. With proper education, awareness, earlier detection and better care, many complications and co-morbidities can be reduced in diabetic population.
Objectives: to evaluate the level of awareness of diabetes mellitus type 2 patients regarding their disease and its' complications.
Methods: Cross - sectional survey was conducted during November and December 2011, in the Medical centers of Al Baladiat, Mustansyria and Zuafranya, including 145 type 2 diabetic patients (58.6 % males, 41.4% females) who were subjected to self-structured questionnaires regarding different aspects of the disease
Results: Medical staff was the main source of information in 75% of patients, poor proportion of correct responses (25.5%) regarding disease etiology, symptomatology of feeling hungry (42.7%), generalized weakness (33.1%) also (44.8% & 30.1%) knew about the target blood sugar and blood pressure respectively. The proportions of correct responses regarding disease complications were not acceptable especially for myocardial infarction (18.6%), also poor daily blood sugar monitoring (11.03%). The knowledge of patients regarding management of disease by life style modifications was poor regarding physical exercise (40.6%) and weight reduction (40%) and (46.8%) of patients knew their drugs name , doses and side effects.
Conclusions: Generally, poor awareness of patients regarding diabetes mellitus and its complications.

Introduction:

Diabetes Mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Iraq is one of the fore fronts of type 2 diabetes mellitus epidemic [(1)].

The increasing number of people with type 2 diabetes is a worldwide concern [(2)], resulting from a diversity of etiologies, environmental and genetic, acting jointly [(3)]. The number of adults with diabetes in the world will rise from 135 million in 1995 to 380 million in the year 2025. The major part of the numerical increase will occur in developing countries [(4)].

In the industrialized countries of the west, diabetes is common among the elderly, in contrast with developing countries; where diabetes most frequently affects those between the ages of 35 and 64 [(5)].

Increased physical activity, modest weight reduction, healthy diet that includes reducing sugar intake and pharmacological interventions can decrease the incidence of diabetes complications [(6-8)].

With proper education, awareness, earlier detection and better care, many complications and co-morbidities can be reduced in diabetic population [(9)]. Various studies conducted in many parts of the world suggest that there is lack of public awareness and knowledge of various aspects related to diabetes [(10-12)]. Obtaining information about the level of awareness is the first step in formulating a preventive programme for the disease [(13)].

This study is designed to evaluate the level of awareness of diabetes mellitus type 2 patients regarding their disease and its complications.

Methods:

Cross- sectional survey study by convenient sampling was conducted over a period of 2 months from 1st November to 31st December 2011 in the Public Medical Centers of Al-Baladiat, Mustansyria and Zuafaranya.

The sample included 145 patients of type 2 diabetes above the age of 30 years with or without concurrent diseases. The diagnosis of disease was registered on the card of chronic non - communicable diseases and patients already receive treatment accordingly. Illiterates, mentally impaired patients were not being taken into account. The study purpose was explained to all participants, and those who agreed to participate were enrolled in the study,

assuring high confidentiality and having verbal consents, they were subjected to self-structured, close-ended, questionnaires consist of socio-demographic characteristics and patient's source of information and different questions concerning awareness regarding the disease and its complications.

Collected data were introduced to Minitab version13 soft ware. Responses were categorized as either correct and scored as (1) or wrong and scored as (zero), were coded and analyzed by using simple descriptive statistics and the average % of all total correct answers for all aspects of diabetes mellitus was calculated.

Results:

The total number of type 2 diabetic patients included in the study was 145 and was distributed as 85 males (58.6%) and 60 females (41.4%).

The socio- demographic characteristics of our patients sample show that the highest percentage 32.4% was in the age group 50-59 years, 51.1% with family history of diabetes, 77.2% were married, 39.3% with primary education followed by 28.2% with college and post-graduate degree, 26.8% were house-wives and 25.5% were governmental employee only 4.1% were alcoholic and 28.9% were current smokers.

The main source of patient's information was the medical staff (75.1%), and the least one was the journals and magazines (6.2%), as shown in Table 1.

Table1: Distribution of patients regarding source of their information.

Sources of Information	Patients No. (%)
Friends and relatives	54 (37.2)
Journals and magazines	9 (6.2)
Television and radio	19 (13.1)
Medical staff	109 (75.2)
Internet	11 (7.6)

The majority of patients responds correctly regarding it is a chronic disease due to hyperglycemia (98.62%) and only 25.51% answered that is caused by both genetic and risky life style habits (Table 2).

Table 2: Distribution of patients' correct responses regarding definition and etiology of disease.

Disease Definition and Etiology	Patients No. (%)
Chronic disease due to hyperglycemia	143 (98.6)
Due to both genetic and risky life style habits	37 (25.5)
Caused by relative deficiency of insulin resistance	86 (59.3)
Caused by insulin resistance	95 (65.5)

The highest percentage of patients responds correctly regarding frequency of urination (78.62%) and feeling thirst (71.72%), on the other hand, as presented in Table 3, the lowest percentage of correct responses was regarding generalized weakness (33.1%) and feeling hungry (42.7%).

Table 3: Distribution of patients' correct responses regarding disease symptomatology.

Disease Symptomatology	Patients No. (%)
Frequency of urination	114 (78.6)
Feeling thirst	104 (71.7)
Feeling hungry	62 (42.7)
Generalized weakness	48 (33.1)
Loss of weight	129 (88.9)
Delayed healing of wounds and fractures	68 (46.8)

The proportion of patients' correct responses regarding normal fasting blood sugar (44.8%) and normal blood pressure (30.39%) were considerably low (Table 4).

Table 4: Distribution of patients' correct responses regarding knowledge ideal measurements.

Ideal Measurements	Patients No. (%)
Normal fasting blood sugar (80-120mg/dl)	65 (44.8)
Normal blood pressure (<140/90mmHg)	44 (30.3)
Ideal body weight	74 (51.0)

The highest percentage of patients' correct responses regarding disease complications was eye problems (47.58%) and the least percentage was myocardial infarction (18.62%), as shown in Table 5.

Table 5: Distribution of patients' correct responses regarding disease complications.

Disease Complications	Patients No. (%)
Myocardial infarction	27 (18.6)
Cerebrovascular accident	37 (25.5)
Eye problems	69 (47.5)
Kidney problems	48 (33.1)
Amputation of legs	34 (23.4)
Loss of consciousness	52 (35.8)
Peripheral neuritis	36 (24.8)

The results presented in Table 6, show that in spite of nearly half of patients have glucometer (52.41%), only 11.03% of them have had daily blood sugar monitoring, with 44.1% have self – monitoring of blood sugar and only 22.06% have monthly doctor visit.

Table 6: Distribution of patients' correct responses regarding disease follow up.

Disease Follow up and Treatment	Patients No. (%)
Monthly doctor visit	32 (22.0)
Daily blood sugar monitoring	16 (11.0)
Self monitoring of blood sugar	64 (44.1)
Self care in case of wounds	86 (59.3)
Routine eyes check up	68 (46.8)
Routine urine check up	67 (46.2)
Routine blood pressure and cholesterol check up	69 (47.5)
Having glucometer	76 (52.4)

The results show that in spite of 70.34% of patients know that life style modification is the 1st step in disease management, yet; only 40% and 40.6% of them recognized the importance of weight reduction and physical exercise, respectively (Table 7).

Table 7: Distribution of patients' correct responses regarding management of disease by life style modifications.

Life Style Modifications	Patients No. (%)
1st step in disease management	102 (70.3)
Should be maintained for life	83 (57.2)
Smoking cessation	85 (58.6)
Physical exercise	59 (40.6)
Weight reduction	58 (40)
Balanced diet	86 (59.3)
Decreased carbohydrates	120 (82.7)
Decreased saturated fats	71 (48.9)
No consumption of beverages and sweats	121 (83.4)

As illustrated in Table 8, only 46.8% of patients knew their drugs names, doses and side effects, while 58.6% of them had answered correctly regarding no reliance on herbal medications.

Table 8: Distribution of patients' correct responses regarding treatment of disease.

Treatment of Disease	Patients No. (%)
Knowing drugs name doses and side effects	68 (46.8)
No reliance on herbal medications	85 (58.6)
Immediate availability of drugs	105 (72.4)

The average % of total correct answers for all aspects of diabetes was 49.7%, which means poor awareness of our patients sample regarding disease and it's complications.

Discussion:

The data collected by our survey grossly indicates that a significant number of patients have little or no awareness of DM and its Complications. Poor awareness and practices are some of the important variables influencing the development and progression of diabetes and its' complications which was largely preventable [14].

The awareness of diabetic population regarding DM is not good world wide. In Singapore [15], Turkey [16], Iran [17], Saudi Arabia [18] and India [12], the awareness is quite low lie about 30%.

Medical staff was the major source of information of our included patients, similarly Saadia et.al [13], in Saudi Arabia found that the main source of information in 68% of patients were the medical staff, this is due to people who are regularly in touch with their health care providers are more aware about diabetes and its risk factors [13].

Diabetes is characterized by a state of chronic hyperglycemia resulting from a diversity of etiologies, environmental and genetic, acting jointly [19], and only 25.5% of this study respondents answered correctly regarding it.

The overall responses of patients regarding disease symptomatology were acceptable except for generalized weakness and delayed healing of wounds and fractures, while shahzad et.al [3], revealed that knowledge about symptoms was inadequate, 50% had absolutely no idea of the cause /symptoms of their illness.

Patients correct responses regarding normal blood sugar and normal pressure, were 44.8% and 30.3% respectively, which were not satisfactory, similarly, studies of Priyanka and Angadi [14] and Chutto [20], found that the awareness was low (36.8%) regarding the target blood sugar and blood pressure.

Knowledge of the respondents regarding disease complications was painfully low, this finding is compatible with Chutto [20], and the awareness of his respondents was also poor.

There is compelling evidence that modest life style changes can prevent incidence and progression of type 2 diabetes [21], yet 40.6% of patients included in this study knew about the benefits of a regular exercise and 40% had the knowledge of diabetic diet. The results of shahzad et.al [3], also showed poor knowledge regarding the importance of regular exercise, while the majority of patients of Priyanka and Angadi study [14], had correct knowledge regarding diet control and recommended died schedules.

Disease follow up was also disappointing in this study, especially, regarding monthly doctor visit and daily blood sugar monitoring, in spite of 52.4% of them have their own glucometers, this is compatible to the results of Zighor and Simmons [22], who revealed that 66% of the respondents were aware regarding self blood sugar examination and just 3% were monitoring their blood sugar at home, this could be explained due to pain of constant finger pricking and the cost and inconvenience of having to perform blood glucose measurement, while 38.4% of the respondents of Nwankwa et.al [23], did go for monthly visits and 29.8% reported visits to the doctor on appointment, while Shrestha and Nagra [24], found that almost all were under regular contact with physicians.

Awareness regarding drugs name, dose and side effects was also poor in spite of prevention of complications of diabetes involves complying with drug treatment and diet regimen, in addition the reliance on herbal medications. Nwankwa et.al [23] in Nigeria, found that 17% of the respondents only knew and 61.7% knew some of medications while 14.8% had no clue what so ever about their medications.

Uchenna et.al in Nigeria [25], found that half of the respondents thought that herbs could cure diabetes, while 93.6% of the participants of Saadia et.al study [13] did not believe that the herbalist can cure diabetes.

Conclusions:

Poor awareness of the included type 2 diabetic patients concerning different aspects of the disease, especially regarding disease etiology, ideal measurements, complications, follow up and management by life style modifications, drug treatment and reliance on herbal medications.

Recommendations:

1. A coordinated effort by health care professionals, dieticians, and social workers is required to improve awareness level.
2. A well organized and structured education/ counseling programme should be established as quickly as possible for diabetic patients about all aspects of diabetes.
3. Health care providers should take time to explain in depth on diabetes, causes and prevention and control through health and self care measures to prevent complications.

References:

1. Directorate of public Health Non communicable Disease Section. National Guidelines for primary Health care physicians. Diabetes Management Iraq 2008.
2. Uchenna Vo., Ijeoma OE, Peace NI and Nqozi IK. knowledge of diabetes management and control by diabetic patients at Federal Medical Center Umuahia Abia State , Nigeria , International J of Medicine and Medical Sciences (2009) , Vol. (9) , pp 353 -368.
3. Shahzad A, Abbasi MS, Ashraf U, Gul S. Diabetes Mellitus: Awareness of disease and life style changes in female patients. JPMS, 2009, Volume: 23, No.0.1: 10-21.
4. World Health Organization (2006). Diabetes Mellitus Epidemiol. Stat 3:652-660.
5. Diabetes Action Now. An Initiative of the world Health Organization and the International Diabetes Federation, WHO library Cataloguing, the publication, data, Geneva, WHO; 2004.
6. Tuomilehta J, Lindstran J, Eriksion JG, Valla TT, Hamalainen H et.al. Prevention of type 2 diabetes mellitus by change in life style among subjects with impaired glucose tolerance. N Engl J Med 2001, 344: 1341 -1350.
7. Knowler WC, Barrelt – Connor E, Fowler GE, Hammon RF, Lachin JM, Walker EA, Nathan DM: Reduction in the incidence of type 2 diabetes with life style intervention or metformin. N Engl J Med 2002, 346.393-403.
8. American Diabetes Association and National Institute of Diabetes, Digestive and kidney Diseases: The prevention or delay of type 2 diabetes. Diabetes care 2002, 25: 742-749.
9. Khuwaja LA, Khuwaja AK, Cosgrove P. Cost of diabetes care in out-patient clinics of Karachi, Pakistan. BMC Health Services Res 2007; 7:189.
10. Gunay T, Ul usel B, Veli pasaoglns, Unal B, Kan R, Ozgener N: Factors effecting adult knowledge Diabetes in Norlidere Health district, Turkey Acta Diabetol 2006, 43: 142-147.
11. Angeles – Lievenas A, Carbajal – Sauchez N, Allen B, Zemora Munoz S, Lazcano- Ponce E: Gender, body mass index and socio-demographic variables associated with knowledge about type 2 diabetes mellitus among 13.293 Mexican students. Acta Diabetol 2005, 42: 36-45.
12. Muragesan N, Snehalatha C, Shobhana R, Roglic G, Ramachanran A. Awareness about diabetes and its complications in the general and diabetic population in a city in Southern India. Diabetes Res Clin Pract 2007, 77: 433-437.
13. Saadia Z Rushdi S, Alsheha M, Saeed H. Bajah M. A study of Knowledge Attitude and practices of Saudi women towards, diabetes mellitus. A (KAP) study in Al- Gassim Region. The Internet Journal of Health – 2010, Vol: 11, No2.
14. Priyanka Raj CK, Angadi MM. Hospital - based KAP study on Diabets in Bijapur, kernataka. Indian Journal of Medical Specialities 2010.
15. Wee HL, Ho HK, Li SC. Public awareness of Diabetes mellitus in Singapore. Singapore Med J 2002 Vol. 43 (3): 128-134.
16. Arslantas D , Unsal A , Metintas S , Koc F. knowledge of diabetic patients about diabetes at the primary stage in Eskischir, Turkey . Pak J Medical Sci April. June 2008 (part - 1) Vol. 24, No. 2, 263 – 268.
17. Bahreini ARSF and Ardekani MA. People awareness about diabetes disease and its complications among aged 18 years and older in Bushehr port inhabitants (Iran) Diabetes and Metabolic syndrome: Clinical research and Reviews Vol.1, Issue 4, 2007, Pages: 245-249.
18. El- Hazmi MAF, Warsy AS , Al- Swailem AR, Sulaimani R, Diabetes Mediterranean Health Journal 1998 Vol. 4 , No1 : 58 -67.
19. Epidemiology of chronic non – communicable diseases and conditions. In: Parks' text book of preventive and Social Medicine, 2009 20th edition; 314 -358.
20. Chutto AM, QADR 4th, Abro AH, Shaikh AM, Sheikh AR, Sheikh N, Buriro AS. Awareness of diabetes mellitus and its complications in diabetic patients. Medical channel 2009, Vol. 15, No 4. Original paper. PP: 151-156.
21. Afridi ARM, Khan NM. Role of health education in the management of diabetes mellitus, J Adv Nurs, 2008: 62 (1), PP 74-83.
22. Zighor J, Simmons D. Barriers to blood glucose monitoring in a multiethnic community Diabetes. Care 2002; 25:1772-7.
23. Nwankowo HC, Nandy B, and Nwonkwo OB. Factors influencing Diabetes management outcome among patients attending Government Health Facilities in South East Nigeria. International J of Tropical Medicine 2010, Vol.5, Issue: 7, PP28-36.
24. Shrestha L, Nagra ST, Nepal Medical College J: 2005, 7 (1): 51-3.
25. Ucheuno VO, Ljeoma OE. Peace NJ and Ngozi IK. Knowledge of diabetes management and control by diabetic patients at fedral Medical Umnabia Abia state Nigeria. International J. of Medicine and Medical Sciences, 2009, Vol: 1 (9), PP: 253 -258.