

Knowledge, attitude and practice of diabetic patients (type II) regarding life style modification at Qena University Hospital in Upper Egypt

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Abstract

Diabetes mellitus (DM) is a metabolic disorder of multiple etiological factors characterized by chronic hyperglycemia with disturbance of carbohydrate, fat and protein metabolism which resulted from either insufficient Insulin secretion, resistance to the action of Insulin or both. The purpose of this study was to assess *Knowledge, attitude and practice of diabetic patients (type II) regarding life style modification*. A descriptive study was conducted using a structured questionnaire amongst 150 type II diabetic patients seen at the diabetic clinic *at Qena University Hospital in(UpperEgypt) from* the first of June (2015) to the end of August (2015). Socio-demographic characteristics of the participants were obtained and their knowledge, attitude and practice regarding lifestyle modification were assessed. Results showed that more than three quarter of the participants had poor knowledge regarding a healthy diet. About the practice, participants showed poor practice to *life style modification*. Nevertheless, our patients had positive attitude toward healthy lifestyle habits which could potentially be harnessed and translated into healthy lifestyle practices. A Life style modification has important roles in management and prevention of many chronic diseases like (type II) DM. It was recommended that implementation of health education programs about life style modification importance of physical exercise and weight loss, fast food, smoking and drinking (alcohol) to the general society should be by the responsible body. Medical nutrition intervention program should be implemented with a multidisciplinary team (nurses, doctors, dietician, pharmacists...)

Key words: Diabetes Mellitus (type II) - knowledge, attitude, practice and life style modification

1. Introduction

Type II diabetes mellitus (DM) is a chronic metabolic disorder associated with high morbidity and mortality among patients Upadhyay (2008). the incidence of diabetes mellitus is increasing at epidemic proportion worldwide Boulton et al., (2005). By 2030, it will grow to 366 million because of longer life expectancy and changing habits of diet Wild et al., (2004). Egypt will have at least 8.6 million adults with diabetes and will be the tenth largest population of diabetics in the world Shaw et al., (2010). The eleventh most important cause of premature mortality in Egypt is diabetes mellitus. It's responsible for 2.4% of all years of life lost. Also, diabetes is the six most important cause of disability burden in Egypt.National Institute Center of Health and Population.,(2004). Diabetes mellitus (DM) is a chronic disorder of glucose metabolism with serious clinical consequences. The prevalence of diabetes has been rising in the recent decades, due to the global changes in lifestyle Nita et al.,(2010). Write in same format. Globally, it is estimated that 382 million persons suffer from diabetes for a prevalence of 8.3% WHO (2013). Many studies conducted elsewhere in the world have shown that the knowledge and awareness about the disease can have positive influence on attitude and practices of patients that could lead to better management of diabetes and eventually good quality of life.

A patient when involved in self management of disease through guidance, education and awareness programs becomes more compliant toward life style changes and drug therapy which help both the practitioner and patient to achieve the treatment goals. However, a knowledge, attitude and practice gap exists in type II diabetes mellitus management that does not allow patients and healthcare professionals to implement life style changes that could reduce the morbidity and mortality associated with diabetes Serrano and Jacob. (2010). Managing DM and its complications is very costly on type II DM patients of Kara Diabetes Association (K.D.A) revealed middle knowledge, practice, SE and good attitude toward diabetes. Wynn and Nyunt (2010) There is increasing amount of evidence that patient education is the most effective way to improve the patient's KAP and SE. Where traditional intervention have not been successful in reaching out to all, theory- based mobile e-health behavioral interventions are more likely to succeed and have the potential of lowering healthcare costs by lowering the use of healthcare resources. Cell phones, a common everyday technology, are already in the hands of millions of people. Harnessing this technology for improving the health of populations would be a step in the right direction. The International diabetes Federation (2011) (IDF) estimates, Bangladesh most of the patients are type II diabetics and the risk of developing type II diabetes mellitus (DM) is determined by some modifiable factors related to rapid urban growth and changing lifestyle (i.e. obesity, sedentary lifestyle, diet, smoking, physical and emotional stress) and non-modifiable factors (i.e. family history of diabetes, age, race/ethnicity) World HealthOrganization (2013). Jarly 8.4 million of diabetes patients which expected to reach to 16.8 million by 2030 International Diabetes Federation (2011) Today; essential components of the treatment for diabetes include diabetes self management education, lifestyle interventions, and goal setting glucose management and pharmacologic management of hypertension and hyper lipidemia ICMR., (2005). Life style modifications are considered the corner stone of management of diabetes mellitus and include the prescription of healthy diet, regular exercise, and avoidance of tobacco Kisokanth (2013).Diabetes mellitus is classified in to type I, type II and gestational diabetes mellitus type I being characterized by insulin deficiency which needs daily administration of insulin. Type II diabetes mellitus results from the body's ineffective use of insulin while gestational diabetes is hyperglycemia with onset or first recognition during pregnancy. WHO (2013). Insulin therapy is an important part of diabetes treatment often and is a cornerstone of treatment in type I diabetes and also critical, in many cases, to the management of type II diabetes. Despite this at least one-third of patients fail to take their insulin as prescribed, and 20% of adults intentionally skip their doses Siminerio (2013). Interventions to promote better self-management have reported improvements in blood glucose control and Improved glycemic control is highly advantageous in preventing the long term complications of type 1 and type 11 diabetes as demonstrated by various studies Wynn Nyunt (2010).

Aim of the study

The purpose of this study was to assess Knowledge, attitude and practice of diabetic patients (type II) regarding life style modification.

Methodology

Setting:-This study was conducted at the Diabetic Clinic in out patients at Qena University Hospital in (Upper Egypt) .

Study design: This study was a descriptive study.

Study population

The study population was all diagnosed (type II) diabetes mellitus patients seen at the diabetic clinic in out patients at Qena University Hospital from the first of June 2015 to the end of August 2015. Inclusion criteria were (type II) diabetic patients aged 29 years and above attending at Qena University Hospital for regular follow-up and who agreed and signed the consent to participate in the study. According to the number statistics of patient for out patient's clinic of the diabetic patients in day 100 cases and the number of doctors 3

Data collection

A structured questionnaire was distributed randomly among 150 patients with(type II)diabetes seen the diabetic clinic in out patints at Qena university hospital. Baseline characteristics of the participants were obtained their knowledge, attitude and practice regarding lifestyle modification, were assessed.

The questionnaire was adopted from Ambigapathy et al., (2003) and Palaian et al., (2006) .The questionnaire was administered by the researcher and two qualified professional nurses trained as research assistants. Participants who agreed to participate in the study signed informed consent.

Scoring on the questionnaires

The questionnaire includes baseline demographic characteristics, body mass index and information on lifestyle modification knowledge, attitude and practice. There are 6 questions on knowledge regarding the benefits of exercise and weight loss, 12 questions on knowledge about healthy diet, 4 questions on attitudes toward lifestyle modifications and 3 questions about practices of lifestyle modification. Each correct answer by the participant for a question earned a score of '1' and each incorrect answer earned a score of '0'. The practice of lifestyle modification questions, labeled as very poor practice, poor practice, good practice and very good practice and later in the analysis that given scores of 0, 1, 2 and 3 were, respectively.

Ethical considerations

The management at Qena University Hospital provided permission to conduct the study. Informed consent was obtained from the participants; both the administration and collection of the questionnaires were anonymous and all information volunteered was kept in strict confidence.

Reliability and validity

A pilot study on 10 (type II) diabetes mellitus patients who were not included in the study was done and the questionnaire was reviewed according to the feedback received from the pilot study.

Data analysis

The data from the questionnaires were captured in Microsoft® Excel 2007 and exported to SPSS Statistics for Windows, Version 14.0. analysis includes descriptive analysis.. The results of the analysis were presented in frequency distribution tables. For the 6 questions on knowledge regarding the benefits of exercise and weight loss, participants who had zero to 2 correct answers out of the 6 were assumed to have poor knowledge Participants who had total between 3 and 4 correct answers were assumed to have average knowledge and those their score range from 3-4 was labeled as 'average knowledge'. Participants with 5 to 6 correct answers were assumed to have good knowledge about the benefits of exercise and weight loss Similarly, for the 12 questions on knowledge regarding a healthy diet, score ranges of 0-5, 6-9 and 10-12 were labeled as poor knowledge, respectively. For the 18 global knowledge questions, score ranges of 0-8, 9-13 and 14-18 were labeled as poor knowledge, average knowledge, respectively. For the 3

practice of lifestyle modification questions, scores of 0, 1, 2 and 3 were labeled as very poor practice, poor practice, good practice and very good practice, respectively.

Table (1) One hundred and fifty type 2 diabetes mellitus patients were recruited for the study. showed that more than the half (62%) were female. The majority were in the age group of (50- to 69)-year, It also showed that a majority of the participants either they were illiterate 41.4% (n = 62.) followed by those can read and write 23.3% (n = 35,). Around 50% of the participants were farmers and live in rural areas.

Figure :-Distribution of (Type II) DM patients by their bodyweight

Anthropometric characteristic of respondents only 15 female (10%) were obese class1. 74 (49.3%) patients and 61 (40.7) were in the range of normal weight and over weight respectively.

Knowledge about lifestyle modification

Table 2 shows that 77.3% (n = 116) of the participants had poor knowledge regarding the benefits of exercise and weight loss; 84% (n = 126) had poor knowledge regarding a healthy diet and 82% (n = 123) had poor total knowledge regarding the value of exercise, weight loss and a healthy diet.

Attitude towards lifestyle modification

A majority of participants either had a strongly positive attitude (n = 102, 68%) or a positive attitude (n = 32, 21.3%) toward lifestyle modifications – a total of 134 (89.3 %) with positive attitudes (Table 3).

Practice of lifestyle modification

Table 4 shows the distribution of participants according to their lifestyle modification practice score. Regarding healthy lifestyle practices, 84.7 (n = 127) of the participants reported that practice very poor and 12 %(n=18); were poor practice . Total number of very poor practice and poor practice (145, 96.7 %.).

Discussion

The prevalence of both types of diabetes varies considerably around the world, and is related to differences in genetic and environment factors Mengel M (2005) and Frier (2010), Health education is not an addition to treatment, but it is one of the treatment tools that has a great effect on enhancing the diabetic patients own abilities to carry out self-care through providing adequate knowledge changing their attitude, and empowering them with skills that are essential for better control of the disease Nicolucci et al .,(2000). Diabetes is associated with complications such as cardiovascular diseases, nephropathy, retinopathy and neuropathy, which can lead to chronic morbidities and mortality Utusan et al (2013). Life style modifications are considered the corner stone of management of diabetes mellitus and include the prescription of healthy diet, regular exercise, and avoidance of tobacco Kisokanth et al., (2013). Demographic characteristic of respondents from total number of 150 type II DM, the majority of the them were female, nearly two third than male participated in this study. A reflection of the gender ratio attendance of patients at the diabetic clinic in out patients at Qena UniversityHospital. More recent reports from developing countries have found that DM and its risk factors are more common in female than male .This finding is corresponding to the results of a study conducted in South Africa at Mamelodi Hospital in which most of the studied sample was female, Ikombele et al., (2011). While the age distribution shows that near half of the sample were in age group of (50-59) years, and more than third were (60-69). This is reflective of the fact that the ethnology of type diabetes mellitus usually at old age, Fauci et al., (2012) and Al Bimani, , and Berhe et al., (2013). Participants with illiterate more than one third and participants with read and write nearly quarter together participants in this study. This indicates that most participants have little or no education, a finding which is similar to Henry et al., (2014) and agrees with Abdulkadir et al., (2014). Especially with read and write. Majority of respondents had normal weight, followed by nearly two third with overweight and more than ten percentage had class I obesity. In the study class 2 obesity and class 3 (morbid obesity) were not found. This study had just demonstrated that lack of physical activities and poor dieting habit among respondents, seem to contribute to the development of (type II) DM rather than obesity. But about nearly two third of the patients in the study were overweight which increases the risk of obesity. This finding is in contrast with many studies done on this area in which obesity was common in the representative sample of type II diabetes patients attending a diabetes clinic Shivapaksh., (2011). It is essential that diabetic patients should possess good knowledge about their illness in order to improve their self-management skills and thereby prevent complications. In our study, the awareness of type II diabetes related health -knowledge was very poor at base line, especially for patients lower education level which was in accordance with the previous studies conducted in both developed and developing countries .AL - Adsani et al., (2009), Ardena et al., (2010) and this agrees with Li Qi, et al (2014). This also accordance to, Kombele found in his study that no respondent had good knowledge and 92.6% of respondents had poor knowledge of the benefits of exercise, weight loss and healthy diet Ikombele (2011).

The low level of education amongst the participants, as well as the lack of a well-organized medical nutrition therapy programme within the hospital, may have contributed to this result. In contrast, another study using the same questions found that the majority of respondents in their study (67%) were knowledgeable about lifestyle modifications Ambigapathy, et al., (2003). These different finding may be because of the differences in literacy level, training received and availability of information on type II diabetes mellitus for their study patients. In this other study, near half of the sample of their respondents had secondary-level education and had access to a well-organised awareness programme on diabetes mellitus. Ambigapathy et al .,(2003) .In terms of attitude assessment, the more than two third of participants with strongly positive attitudes toward lifestyle modification and the nearly quarter with positive attitudes jointly constitute a majority most of the participants with positive attitudes in this study. This is also reflected in other studies, in which the majority of respondents had positive attitudes towards lifestyle modifications. Upadhyay and Mukhopadhyay .(2008 \$2010). The proportion of

participants with very poor lifestyle practices is similar to a study done in which 75.6% of respondents had bad practices in relation to lifestyle modifications. Kiberenge W (2010).As there is evidence in the literature that good knowledge can be translated into healthy lifestyle practices by promoting behavior change using motivational interview approach, West,Calhoun and Henry(2007,2010,2014). the lack of knowledge and skills at Qena University Hospital were generally poor with regard to motivational behavior change facilitation might have contributed to this result.

Conclusion:-

The knowledge and practice levels of lifestyle modifications amongst type II diabetes mellitus patients attending at **Qena University Hospital** were generally poor. Nevertheless, majority of these patients have positive attitude toward healthy life style habits which could potentially be harnessed and translated into healthy lifestyle practices.

Recommendation: Lifestyle modification has important roles in prevention and management of chronic diseases like type II DM patients, which its prevalence is increasing worldwide at an alarming rate especially in developing countries due to different factors like sedentary life style in Upper Egypt and deficits in the knowledge and practice of LSM.

Based on these facts and on our research findings, it was recommended that:

- Health education about life style modification (importance of exercise, physical exercise and weight loss) to the general society should be implemented by the responsible body.

- Medical nutrition intervention program should be implemented with a multidisciplinary team (nurses, dietician, pharmacists...)

- Empower and train at Qena University Hospital healthcare workers about this issue in order to promote behavioral change and adoption of healthy lifestyle practices by patients.

- Further research should be done on this area.

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Table (1)
Socio-demographic characteristics of respondents (n = 150)

Variable	No	%
Sex	93	62%
female	57	38%
male		
Age(years)		
29-39	5	3.3%
40-49	21	14.1%
50-59	69	46%
60-69	54	36%
More than 70	1	0.6%
Education level		
illiterate	62	41.4%
read and write	35	23.3%
Elementary	24	16%
High school and above	29	19.3%
Occupation		
Merchant	13	8.7%
Employee	15	10%
Daily laborer	18	12%
Farmer	76	50.7%
Student	0	0%
House wife	25	16.6
Other	3	2%

Residence		
Rural area	81	54%
Urban area	69	46%

Table (2)

Frequency distribution of knowledge about lifestyle modification, diet and total knowledge

Variable	No	percentage
Score knowledge about benefits of exercise and weight loss		
Poor knowledge	116	77.3%
Average knowledge	29	19.3%
Good knowledge	5	3.4%
Score knowledge about healthy diet		
Poor knowledge	126	84%
Average knowledge	21	14%
Good knowledge	3	2%
Total knowledge score		
Poor knowledge	123	82%
Average knowledge	25	16.7%
Good knowledge	2	1.3%

Table (3)

Frequency distribution of participants according to attitude scores for lifestyle modifications

Attitude score	Number of respondents	Percentage
Strongly negative	1	0.7%
Negative	3	2%
Neutral	12	8%
Positive	32	21.3%
Strong positive	102	68%
Total	150	100%

Table (4)

Frequency distribution of participants according to lifestyle modification practice score

Practice score	Number of respondents	
		%
0Very poor practice	127	84.7
1 poor practice	18	12
2 good practice	4	2.7
3 very good practice	1	0.6
Total	150	100%