



COMPLIANCE OF DIABETIC PATIENTS TO THERAPEUTIC REGIMEN

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ABSTRACT :

Diabetes is a chronic disease of life long duration, and its management require a fundamental change in the patients' life style. The success of long term maintenance therapy for diabetes mellitus depends largely upon the patients compliance with a therapeutic plan. This study aimed to assess compliance to therapeutic regimen of diabetic patients attending out-patient clinic and in-patient department at Assiut University Hospital (n=100). The results showed that, more than half of the patients 60(60%) had good compliance with diet regimen, and majority of the patients (78%) had good compliance with treatment regimen, and 75% of the patients had good compliance for periodic check up for glycemic status. However, 45%, 70%, 56% and 88% had poor compliance with foot care, smoking cessation, blood pressure monitoring and eye examination respectively.

INTRODUCTION:

Diabetes is a serious public health problem that threatens the quality of life of patients with the disease, it can lead to acute and chronic complications. It is a significant cause of disability and death in many countries (Amokute & Hussein 1991).

Diabetes is an emerging clinical and public health problem in Egypt (Herman 1995). It has been reported that 4.3% of the Egyptian population has been diagnosed as diabetic (Arab, 1991 & Alwan, 1994).

Diabetes is a chronic disease of life long duration and its management requires a fundamental change in the patients' life style. The most important member of the diabetic care team is the patient. The success of long

term maintenance therapy for diabetes mellitus depends largely upon the patients compliance with a therapeutic plan (Cerkoney & Hart 1980). Compliance of diabetic patients with medical advice is essential for controlling the disease. Compliance is defined as the extent of adherence of patients to medical advice, also defined as fulfillment by the patients for prescribed course of treatment and the degree to which patient carries out for completing a treatment regimen, taking medications correctly and following recommended changes in behavior of their practitioners, it is affected by many factors related to the patients, the disease, the physician and the family (Kaplan 1990 & Evons 1993).

Compliance with a prescribed therapeutic regimen can reduce morbidity and mortality of chronic illness where information provided to the patients increases their knowledge and understanding of the risk factors for their illness and teaches preventive behaviors which are concentrated on the prescribed therapeutic regimen included, medication administration, dietary changes, exercises, smoking cessation and stress management (Evons & Haynes 1993).

Significance of the study:

A study of compliance among diabetic patients is considered a priority need at the moment for these reasons; first, diabetes mellitus is becoming a major health problem and causes considerable increase in morbidity, mortality and cost to the society. Secondly, it is a proven fact that long term complications of diabetes mellitus can be prevented or postponed through good care and control of the disease (Clark & Lee 1995) and non compliance may produce adverse effect on the quality of medical care and may waste resources. Thirdly, it interferes with the therapeutic effect by reducing the benefit of the preventive or curative services offered (Feinstein 1990). Fourthly, non compliance may cause unnecessary and additional diagnostic procedure and treatment thus generating further cost (Waterhouse et al 1993 and Urquhart 1994). In addition it contributes to unnecessary hospital admission (Bergman & Wiholm 1981).

Aim of the study:

The aim of this study is to assess compliance of diabetic patients to therapeutic regimen.

SUBJECT AND METHODS:

Design: Descriptive research to assess compliance of diabetic patients to therapeutic regimen.

Setting: The study was conducted at the internal medical department and in out-patient clinic at Assiut University Hospital.

Subjects: The study subjects are 100 diabetic patients from both sexes and age ranged from 20 to 80 years.

Tools: Interview questionnaire was developed by the researchers based on the review of current related literatures to collect data pertinent to the study, it includes 3 parts:

First part: Socio demographic data; age, sex, educational level, residence, marital status and income.

Second part: Includes medical data history of associated diseases; diabetic foot, hypertension, heart disease and kidney disease.

Third part: It includes closed ended questions related to compliance to therapeutic regimen as compliance with dietary regimen, smoking cessation, treatment regimen, exercises, periodic check up (including eye examination and blood pressure monitoring), periodic laboratory tests for glucose in blood and urine and self care practice as foot care.

Methods:

-Tool of the study was developed by the researchers.

-Content validity of the questionnaire was checked by expert professors in field of medicine and nursing and correction were carried out accordingly.

-Pilot study was carried out on 10 patients using the developed tools in order to test their clarity and applicability. The necessary modifications were done. The collection of data began from February 2002 to June 2003.

-The tool was completed by the researcher for each subject throughout 30 minutes.

-Compliance to prescribed therapeutic regimen was prospectively assessed by self report method (the patients were asked to describe their behavior in relation to compliance to therapeutic regimen).

-Compliance with therapeutic regimen was graded as a good, fair and poor depending on the reported compliance to the therapeutic regimen by the diabetic patients. Compliance with anti-diabetic drugs was assessed by the extent of compliance of the diabetic patients to the prescribed dose of medications. Good compliance was recorded when the patient took all his/her medications in accordance with the prescription, fair when she/he missed 1-3 doses per month and poor when she/he missed 4 or more doses per month.

-Compliance with dietary regimen, good compliance was recorded when the patients strictly followed the prescribed dietary regimen; fair when he/she sometimes did not follow the regimen and poor when she/he did not follow the regimen at all.

-Compliance with foot care; good compliance was recorded when the diabetic patient usually does proper foot care, fair if the patient sometimes does proper foot care and poor when the patient never does foot care.

-Compliance with smoking cessation. Good adherence when the patient stops smoking after diagnosis of diabetes, fair when the patient decreases the amount of smoking to about the half of that before diagnosis of diabetes, and poor if she is still smoking as before.

-Compliance to exercise regimen, blood pressure monitoring, eye examination and laboratory tests for glycemic status was recorded as good compliance when the patient usually does, fair when the patient sometimes does and poor when the patient never does.

RESULTS:

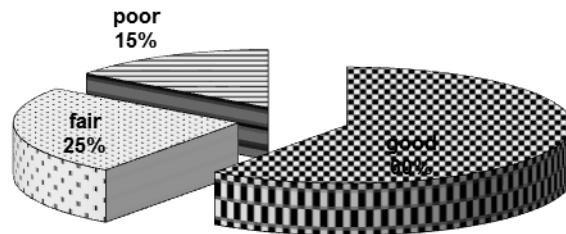
Table (1): Socio demographic characteristics and medical data history of the studied subjects.

Items	No	%
Age:		
20 > 40	20	20
40 > 60	51	51
60 > 80	29	29
Sex:		
Male	65	65
Female	35	35
Education level:		
Illiterate	60	60
Read and write	25	25
Secondary education	5	5
Marital status:		
Married	75	75
Divorced	11	11
Single	14	14
Residence:		
Rural	75	75
Urban	25	25
Associated disease:		
Diabetic foot	15	15
Hypertension	30	30
Heart disease	2	2
Kidney disease	3	3

Table (1) revealed that, most of our sample subjects were males (65%) more than females (35%) and about half of the subjects (51%) aged from 40-<60 years. The majority of the sample were illiterates (60%) and only 5% had secondary education. Most of the patients (75%) were married, seventy five percent came from rural areas and 15% of the patients had diabetic foot and 30% had hypertension.

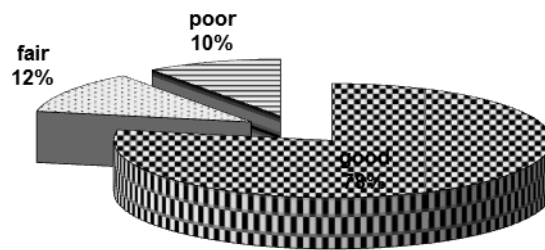
Figures (1-8) showed compliance of diabetic patients to therapeutic regimen. The results revealed that, most of the patients had good compliance with treatment regimen and 60% had good compliance with diet regimen and only 26% of patient had good compliance with foot care.

Fig. (1) :compliance with dietary regimen



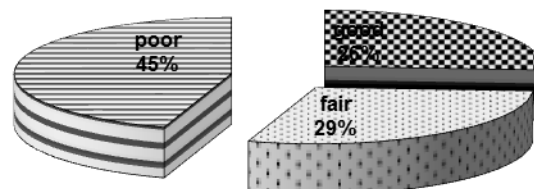
Good : Followed the prescribed dietary regimen.
Fair : Some time did not follow the regimen.
Poor : Did not follow the regimen at all.

Fig. (2) :compliance with treatment regimen



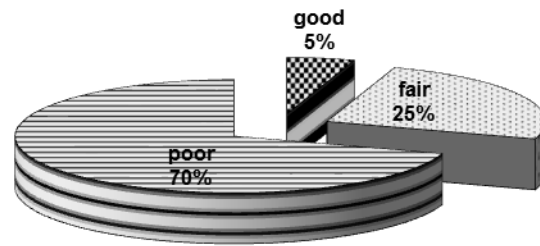
Good : Took all medication in accordance with the prescription.
Fair : Missed 1-3 doses per month.
Poor : Missed 4 doses or more per month .

Fig. (3) : Compliance with foot care



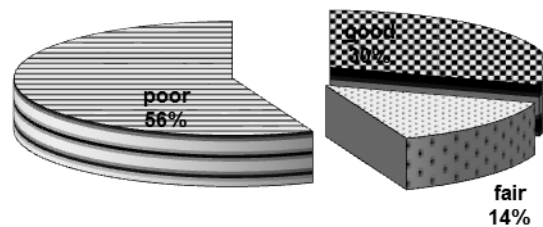
Good : Usually did proper foot care.
Fair : Sometime did proper foot care .
Poor : Never did proper foot care .

Fig. (4) : Compliance with smoking cessation



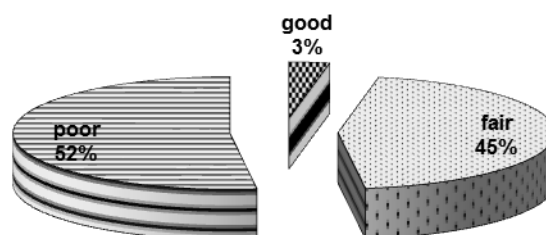
Good : Stopped smoking .
Fair : Reduced the number of cigarettes smoked.
Poor : Still smoking as before diagnosis.

Fig. (5) : Compliance with blood pressure monitoring



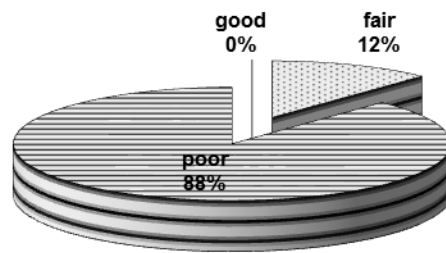
Good : Usually checked blood pressure .
Fair : Sometime checked blood pressure.
Poor : Never checked blood pressure.

Fig. (6) : compliance with exercise program



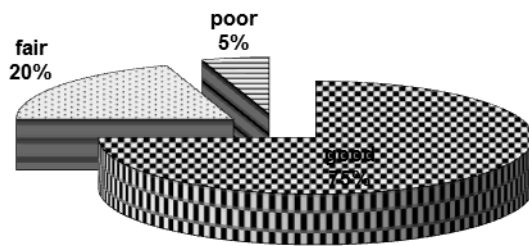
Good : Usually did exercises.
Fair : Sometime did exercises.
Poor : Never did exercises.

Fig. (7) : Compliance with eye examination



Good : Usually did eye examination.
Fair : Sometime did eye examination.
Poor : Never did eye examination.

Fig. (8) : Compliance with check up for glycemc status



Good : Usually checked up for glycemc status.
Fair : Sometime checked for glycemc status.
Poor : Never checked for glycemc status.

Five percent only had good compliance with smoking cessation, while 70% had poor compliance in this aspect. Only 30% had good compliance with blood pressure monitoring and most of the patients (88%) had poor compliance as regard eye examination. 75% of the patients had good compliance with laboratory tests for glycemic status in the hospital and private clinics but not at home. More than half of the subjects (52%) had compliance to exercise program considering routine physical activities as exercise.

DISCUSSION:

The main objectives of management of diabetes mellitus are to improve the quality of life of patients so that they can have a normal life as far as possible (WHO 1985). Successful management depends upon the extent to which a person's behavior, in terms of keeping appointments, taking medication and making life style changes-coincides with medical advice given (Dun 1988 & Kamel et al 1999).

An important therapy in the management of diabetes is the use of medication. The patients should be motivated to use the medications prescribed (Glogow 1991). Our study indicates that, the majority of diabetic patients (78%) adhered to medical treatment prescribed. This result is supported by Shama (1997) & Kamel et al (1999) and also supported by Krovitz et al (1993) who reported that, 91% of their patients took medication as prescribed, also Anderson and Fitzgerald (1993) reported an even higher rate of compliance with medication regimen for pills and/or insulin.

The management of diabetes is not restricted to medication and monitoring of blood glucose level, it also includes adjustment of diet and amount of exercise (Kamel et al 1999). Diet is the most important behavioral aspect of treatment of diabetes and considered

the backbone of any treatment plan for diabetes mellitus (Close & Wiles 1993). The study revealed that 60% followed the prescribed dietary regimen and 15% only did not follow regimen at all. Wing et al (1986) reported that, 75% were not eating prescribed food and this is not consistent with the results of the present study.

Exercise is an important part of managing diabetes because it improves insulin action in both types of the disease (Martin & Wahren, 1993) and Taylor (1999) and a regular physical activities program helps to reduce body weight, decrease glucose intolerance and the occurrence of complications (Kriska 1991). 35% of the subjects considered that routine daily physical activities as exercises and only 20% of the subjects considered walking as exercise but not daily. Shama (1997) also reported the poor performance of diabetic patients in this aspect. Vignatti & Cunningham (1985) reported that, patients need to understand that daily activities are not considered exercises.

Kozak et al (1995) reported that, ulceration and amputation of the lower extremities are among the most serious complications of diabetes. Mayfield & Reiber (2000). Suggested that foot examination may be associated with a decrease in amputation risk and identification of foot problems should be followed by appropriate treatments in order to prevent serious complications. Several studies suggested that attention to foot care can lower the rate of extremity amputation by 44% to 55% (Kozak, 1995 and Brunner & Suddarth 2001).

Smoking doubles the damage to the body caused by diabetes by causing hardening of the arteries. This particularly affects the larger arteries to the legs and brain, making amputation and stroke more likely (Udine, 2002). Researchers have discovered smoking triples the retinopathy progression rate. Among

smokers of this study (N=60), only 5% had stopped smoking while 25% reduced the number of cigarettes smoked while 70% smoked as before diagnosis. This result is supported by Handestad & Albrektsen (1991) and Toljam (1999) who reported that, sixty eight percent of diabetic patients reported difficulties with the control of smoking and 35% find it difficult to quit smoking.

Hypertension is a known risk factor of microvascular disease in diabetes (Parving & Hommel 1989 and Kamel et al 1999). Hence, diabetic patients should have their blood pressure checked routinely for prevention and early treatment of the disease (Gatling 1988). The finding of the present study showed that only 30% of diabetic patients who had hypertension and adhered to checking blood pressure. This result is consistent with Kamel et al (1999) who reported that 38% of diabetic patients went for blood pressure assessment.

One of the serious complications of diabetes is diabetic retinopathy which is the leading cause of blindness and visual impairment (Raskin 1992 and Klein 1995). Javitt (1994) stated that ophthalmologic care not only results in reduction of blindness but also reduces and saves cost. Also, close glucose control can help delaying the onset of retinopathy and slows its progression. Loss of vision from retinopathy can be prevented in the majority of patients provided that the condition is detected early Zoorob and Hagen (1997). Our findings revealed that most of the subjects (88%) did not attend eye screening and 12% only had eye examination only when they had eye problems.

CONCLUSIONS & RECOMMENDATIONS:

It can be concluded that, the majority of the patients had good compliance with diet regimen, treatment regimen and laboratory tests for

glycemic status while, the diabetic patients had poor compliance with smoking cessation, blood pressure monitoring, eye examination and exercise program. Hence, it is recommended that, every effort should be made to initiate and promote behavioural changes in people with diabetes. To achieve this, an appropriate education and training program should be provided for all diabetic patients and their relatives in a written booklet in a simple language also supplemented with posters about diabetes, its management and prevention of diabetes complications to provide the patients with the necessary and required knowledge and skills. To improve compliance with therapeutic regimen, collaboration of patients and their relatives with the health team members is needed to improve compliance. To ensure compliance with diet regimen, the prescribed diet should be individualized, it must be realistic, flexible and taking in consideration the patient's likes and dislikes and must suit the patient's life style.

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امتثال مرضى السكرى للنظام العلاجى سامية محمود طلب، أشرف الشاذلى*

قسم التمريض الباطنى والجراحى كلية التمريض، *قسم الأمراض الباطنة كلية الطب – جامعة أسيوط

يعتبر مرض السكرى من الأمراض المزمنة والتي تستمر طيلة الحياة، وعلاجه يحتاج إلى تغييرات أساسية فى نمط حياة المريض؛ لذلك فإن نجاح العلاج لفترات طويلة يعتمد بصورة كبيرة على امتثال المريض لخطة العلاج، وتهدف هذه الدراسة إلى تقييم الامتثال لنظام العلاج لمرضى السكرى المترددين على العيادة الخارجية والقسم الداخلى بمستشفى أسيوط الجامعى .

وقد تم دراسة ١٠٠ مريض، وأظهرت النتائج إلى أن أكثر من نصف المرضى ٦٠% قد امتثلوا جيداً للنظام الغذائى، ٧٨% امتثلوا جيداً لنظام العلاج الدوائى، ٧٥% امتثلوا جيداً للمتابعة الدورية لحالة السكر بالدم وعلى الجانب الآخر فقد كان الامتثال ضعيفاً للعناية بالقدمين والتوقف عن التدخين ومتابعة ضغط الدم وفحص العين فى ٤٥%، ٧٠%، ٥٦%، ٨٨% على الترتيب .