Knowledge, Attitude and Practice of Diabetes Control among Patients, Khartoum Teaching Hospital

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Abstract: *Purpose: The problem of diabetic care in Sudan includes poor awareness and compliance with therapy or diet, lack of efficient Diabetic care centers, lack of specially trained personnel, the purpose of the study to identify the Knowledge and Attitude of diabetes control among patients at Khartoum teaching hospital. Objective: To identify the awareness of diabetics about complications that may occur with diabetes and how can they deal with this complication, to assess and evaluate advice given to the diabetic patients in compliance with the follow up and health care services given to them by the Diabetics Care Units at the hospital. Material and Method: 50 Diabetic patients were interviewed to collect information to identify diabetic patient's awareness. Data was collected by researchers using questionnaire. Results: 50% of the patient's examined with age ranged between 41-50year. (60%) of the patients had the diabetes since 5years. (72%) didn't have a glucometer, (38%) of diabetic patient missed their doses more than twice. The glucose level of (46%) patients were 180-250mg/dl, (54%) of patients were admitted to hospital due to diabetic complication. Some of the patients had days off work due to diabetes. There was positive correlation between level of education and clinical discovery of diabetes, follow up with dietician and feet examination. Conclusion:- Most of the patients had poor follow up with their doctors; they didn't know the importance of diabetic education, taking treatment in accurate time and eye, feet checking.*

Keywords: Health, Education, Diabetes care, Awareness, Sudan

1. Introduction

Diabetes mellitus is a group of diseases characterized by High blood glucose concen-trations resulting from defects in Insulin secretion, insulin action, or both. Abnormalities in the metabolism of carbohydrate, protein, and fat are also present. Persons with diabetes have bodies that do not produce or respond to insulin, a hormone produced by the B-cells of the pancreas that is necessary for the use or storage of body fuels. Without effective insulin, hyperglycemia (Elevated blood glucose) occurs, which can lead to serious

Complications and premature death; but, people with diabetes can take steps to control the disease and lower the risk of complications. (1). Diabetes mellitus is also defined as a condition characterized by an elevation of the level of glucose in the blood. Insulin, a hormone produced by the pancreas, controls the blood glucose level by regulating the production and storage of glucose (2).

1.1. Types of diabetes

There are four major classifications of diabetes mellitus, namely:-

1.1.1-Type I diabetes is known as insulin dependent diabetes mellitus" IDDM" .About 5-10% of patient have type I diabetes mellitus. The pancreas produces inadequate amounts of insulin, resulting in the need for insulin therapy to control the blood glucose. It is characterized by a sudden onset, usually before the age of 30 years.

1.1.2-Type II is none insulin dependent diabetes mellitus "NIDDM". It results from a decrease in the sensitivity of the cells to insulin and a decrease in the amount of insulin produced. About 90-95% of patients have type II diabetes.

1.1.3-Type III This is where diabetes mellitus is associated with other conditions, for example, pancreatic disease, hormonal disorders and drugs such as gluco-corticoids and estrogen-containing preparations. Depending on the ability of the pancreas to produce insulin, the patient may require oral agents or insulin (3).

1.1.4-Gestational diabetes mellitus:- The onset of Gestational diabetes mellitus is during pregnancy, usually in the second or third trimester, as a result of hormones secreted by the placenta, which inhibit the action of insulin. It occurs in about 2-5% of pregnancies. About 30-40% of patients with gestational diabetes mellitus will develop type II diabetes within 5-10 years (especially if obese). Impaired glucose tolerance and statistical risk groups are examples of gestational diabetes mellitus. (2) (3).

1.2. Clinical Management of Diabetes

Clients should eat three meals per day, with snack in the late afternoon and before bed time in order to coincide with peak action times of insulin. The diet should be will balanced; calorie controlled, and avoids concentrated sweets (4).

1.2.1-A low-fat diet is recommended to reduce the risk of elevated serum cholesterol levels, and reduce weight. Vegetables can be eaten raw or boiled (without the addition of sugar, salt or butter). Spices, herbs and salted meant for hypertensive patients, that are available at selected supermarkets, should be used instead of ordinary salt. These reduce the accumulation of fluids in the body caused by the intake of ordinary salt. Snacks should be part of the diet and should be taken between meals to prevent hypoglycemia and to prevent the patient from eating full meals frequently which can lead to weight gain (5).

1.2.2-Exercise is considered an essential part of diabetic management. It contributes to the reduction of weight and cholesterol level. Exercise is important because of its effect on lowering blood glucose and reducing cardiovascular risk factors. It increases the uptake of glucose by the body muscles and improves insulin utilization. Patients should be encouraged to exercise daily at the same time and for the same amount to maintain constant, normal blood glucose levels. Patients need to consult the health care personnel before resuming with exercise to give them advice on when to exercise and when not. This is important because exercising with elevated blood glucose levels will cause increased secretion of glucagons, growth hormone and catecholamine. The liver will then release more glucose, resulting in an increase in blood glucose. Exercise should therefore not be performed until blood glucose levels are under 14mmol/L. Patients should monitor blood glucose levels before, during and after exercise to determine the effect exercise has on the blood glucose level at particular times of the day.

Exercise can be in the form of walking, swimming, aerobics, playing soccer or participating in athletics (6) (7).

1.3. Control of Diabetes

Diabetes as a self-managed condition requires from patients relevant knowledge, skills and attitudes for the successful management of diabetes.

Counseling and health education should include information on regular home monitoring of blood and urine glucose levels, weight control, dietary restrictions, regular exercise, foot care eye care. They must be reassured about the continuity of care and the value of   compliance with the treatment regimen, and the family should be involved in the treatment regimen to offer support and encouragement. (8)

2. Results and Discussion

Table 1: General Characteristics.

Age	Frequency	Percent)%(
<30 yrs	4	8.0
30-40 yrs	10	20.0
41-50 yrs	25	50.0
51-60 yrs	11	22.0
Total	50	100.0
Gender		
Male	30	60.0
Female	20	40.0
Total	50	100.0
Marital Status		
Single	18	36.0
Married	32	64.0
Total	50	100.0
Occupation		
Employed	30	60.0
Unemployed	20	40.0
Total	50	100.0

Table No 1. Show the characteristics of the respondents. The majority their age ranged 41-50 year, 60% were males, 64% of them were married and 60% were working in permanent jobs.

Table 2: Absent from work

Absentee last month	Frequency	)%(
<10days	17	56.67
10-20days	8	26.67
20-30days	4	13.33
>1month	1	3.33
Total	30	100

Table No 2. Shows the absent of the study group from their work due to illness. 56.6% of the patients had days off work due to some illness in the last month. The study reveal that most absence due to diabetes illness.

Table 3: Duration of diabetes mellitus

Duration of diabetes mellitus	Frequency	Percent)%(
<5 yrs	30	60.0
5-10 yrs	12	24.0
>10 yrs	8	16.0
Total	50	100.0

Table No 3. Shows the time since the study group member discover they are diabetic case. 60% got the disease in a period less than 5 years

Table 4: Treatment

Type of treatment	Frequency	)%(
Dietary control	5	10.0
Hypoglycemic drugs	12	24.0
Insulin	32	64.0
Regular physical exercise	1	2.0
Total	50	100.0

Table NO4 represents the treatment used by the study group to control blood glucose. 64% controlled their diabetes by insulin. There is few group used physical exercise 2%, these group should consult a specialist to advice them about the suitable treatment to control blood glucose. Nutrition education is very important to this group.

Table 5: Monitoring Diabetes

Monitoring Diabetes	Frequency	)%(
Weekly	20	40.0
Every 2 weeks	9	18.0
Monthly	17	34.0
Every 3 months	2	4.0
Not follow	2	4.0
Total	50	100.0

Table NO5. Shows the specific time set by the respondents to monitor their condition due to the diabetes. The majority of diabetic patient monitor their diabetic in specific time but only small group 4% are not follow their diabetic condition. These small group needs nutrition education about the important of follow up to avoid complication due to uncontrolled of glucose level.

Table 6: Special Diabetic Diet

Special diabetic food in the last 3 months	Frequency	)%(
Yes	13	26.0
No	37	74.0
Total	50	100.0

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Table No 6. Represent the used of diet that the diabetic patient to follow. The study reveals that 74% of respondents do not know the diet which used in case diabetes to control the blood glucose level. Diabetic patient should be aware about the suitable food and know how to control their blood glucose to avoid the diabetes complications.

Table 7: Miss the Dose

miss dose	Frequency	)%(
Once	6	12.0
Twice	15	30.0
More than two	19	38.0
Never	10	20.0
Total	50	100.0

Table NO.7.Shows the frequency of missing of the respondents the medical dose used in the treatment of diabetes. Most of the study group miss their dose between once to more than two. Only 10% never miss their dose used for treatment of diabetes.

Table 8: Examine Feet

Ever examine feet	Frequency	)%(
Yes	18	36.0
No	32	64.0
Total	50	100.0

Table No 8. Shows that during the last year, has doctor or other health professional ever examined the feet of the diabetic patient. 64% of the respondent s are not aware about the important of feet check. Beside from the result of this study the most of them miss their dose of drug, not know the suitable diet.

Table 9: Eyes Examination

Eyes examination	Frequency	)%(
Yes	23	46.0
No	27	54.0
Total	50	100.0
Eye problem		
Yes	38	76.0
No	12	24.0
Total	50	100.0

Table No 9.   Shows the eye examines done by the respondents, and the problem affect s the eye due to diabetes. 54% of the respondent are not examined their eyes since they discovered the diabetes, and 76% of them have eye problem.

Table 10: Diabetes Health Education

Diabetes educator	Frequency	)%(
Yes	13	26.0
No	37	74.0
Total	50	100.0

Table No10. Shows the real health education which diabetic patient attends. 74% of the respondents are not attends any diabetes health education. These leads to most of them mist the drug dose, not know the suitable diet, not used special diabetic diet, and have eye problem.

Table 11: Dietitian consultation

Consultation	Frequency	)%(
Yes	17	34.0
No	33	66.0
Total	50	100.0

Table No 11. Represents consulting of the study group a dietitian. 66% of the respondents are not consulting a dietitian to get knowledge about suitable diet for the diabetic patient. These may be the reason for high blood glucose level when the study group examine during the interview.

Table 12: Blood glucose level

Blood glucose level	Frequency	Percent)%(
100-180	6	12.0
180-250	23	46.0
More than 250 mg/dl.	21	42.0
Total	50	100.0

Table NO12. Shows level of blood glucose. 46% of the respondents their blood glucose level was 180-250 mg/dl and 42% their blood glucose more than 250 mg/dl when the study group examine during the interview. These results reveal that most of the study group has high blood glucose level.

Table 13: Admitted to hospital

Admitted	Frequency	)%(
Yes	27	54.0
No	23	46.0
Total	50	100.0

Table No 13. Shows admitted of the study group to a hospital in the previous year. 54% of patients were admitted to the hospital due to diabetic complications.

Table 14: Following instructions

Following instructions	Frequency	Percent)%(
Yes	2	4.0
No	48	96.0
Total	50	100.0

Table NO14 Shows follow up of the study group to the instructions given them by the doctors. 96% of the patients were not follow doctor instructions in taking drugs. This result explains the high number of diabetic patient admitted to the hospital.

2. Conclusion

Most of the patients had poor follow up with their doctors; they didn't know the importance of diabetic education, taking treatment in accurate time and eye, feet checking.

3. Recommendation

The researchers recommended that the media should take part in encouragement of diabetic patients to visit health educators and nutritionists to know more about diabetes mellitus.

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