Original Article

Awareness of Diabetic Complications Among Diabetic Patients Presenting to MMC Mardan

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ABSTRACT

Objective: To find out whether patients are aware of these complications, which occurs mainly with uncontrolled diabetes and can be a source of significant mortality and morbidity.

Study Design: Descriptive/cross-sectional study.

Place and Duration of Study: This study was conducted at the Medical B Unit of Mardan Medical Complex (M.M.C), Mardan from September 2019 to December 2019.

Materials and Methods: Both male and female diabetic patients were admitted from medical OPD, having minimum duration of diabetes of one year. Patients below 15 years of age were not included in study.

Results: Out of 112 patients 44 were male and 68 were female which makes 39.28% and 60.71% respectively. 82 patients were totally illiterate; 26 patients have passed their higher school /inter examination while only 4 patients were graduate. Level of awareness about diabetic complications was poor among females as compared to males, it was also poor among the totally illiterate patients as compared to the ones who have gone through higher school / inter level college or were graduates. Patients with short duration of diabetes were also poorly aware of the complications than those with a long history.

Conclusion: Most of the patients with diabetes do not take their disease seriously and are unaware of the complications that can be caused by it. They came to know about complications of the diabetes when they themselves suffer from it and thus causing significant morbidity and mortality. Therefore, it is important that we as physicians not only concentrate on the management of disease but also educate them properly and this should be done both at community and hospital level so as to reduce the morbidity and mortality of the diabetes.

Key Words: Awareness, Diabetes mellitus, Diabetic complications

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INTRODUCTION

Diabetes Mellitus is the most common endocrine disorder throughout the world but by blessing of almighty ALLAH it is a non-communicable disease. 200 million people worldwide have been its victim and is a killer of 32 million people each year [1]. In 1985, 30 million people were suffering from Diabetes which only within a lapse of 25 years reached to 285 million people in the year 2010, and it is estimated that by the year 2030 this figure may raise to 349 million [2, 3].

In 2003 it was estimated that 6.2 million people in Pakistan were diabetics and it is expected that this number may rise to 14.5 million by the year 2025 only then three countries will be leading us by number of diabetic patients[4], 10% of the total adult Pakistani people have diabetes mellitus while people with impaired glucose tolerance test makes another 10% [5, 6].

Due to large number of complications associated with diabetes mellitus, life expectancy of diabetics is decreased by 10 to 30% and they die earlier than the normal population [7, 8]. These complications may occur acutely such as diabetic keto acidosis (D.K.A), hyper osmolar non ketotic coma (HONK), and hypoglycemic diabetic coma. While chronic complications are mainly vascular and include both macro and microvasculature. Peripheral vascular disease, coronary artery disease, T.I.A / C.V.A, diabetic foot is some of the examples of macro vascular complications of diabetes. The micro vascular complications include diabetic nephropathy, neuropathy, retinopathy. It has been observed that people having well controlled glycemic status, then there are less chances of these complications and if it occurs they are not that much severe as in patients with uncontrolled diabetes [9,10]

So it is now need of the day that diabetics must have a multidimensional management plan that includes recommendations about their diet, physical fitness and educating them about their disease besides treating their glyceamic status and other complications with drugs.

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This will not only raise their moral and only then they can have led a normal life with minimum complications otherwise they would require frequent hospitalizations for uncontrolled diabetes and its complications.

The main objective of study was to find out the awareness of diabetic complications among them and to educate them so that they may develop a proper strategy to slow down the progression of disease and its complications.

MATERIALS AND METHODS

This was a cross-sectional descriptive study and was conducted in Medical B unit of MMC Mardan from 1st September 2019 to 30th December 2019. A total of 112 patients both male and females were included in the study. Patients below 15 years of age were excluded. Patients related to medical profession such as doctors and paramedics were also excluded. Both male and female of 15 and of above age and with a minimum duration of diabetes of one year of age were included after taking an informed consent from them. Patients were first interviewed and then a questionnaire was given to them in local language. They were supposed to answer them in yes or don't know. A total of 15 questions regarding diabetic complications were asked and on basis of answers of these questions they were divided into three groups. Those having 10 yes answers out of 15 were put into good knowledge of diabetes, while 6-9 yes answers out of 15 were classified as having average knowledge, while below 6 yes answers out of 15 were labeled as having very poor knowledge of their disease.

RESULTS

Table No.1: Relationship of Awareness of Complications of diabetes mellitus with Sex, education, and Duration of disease.

Parameters	Level of Awareness			Total
	Good	Average	Bad	
Gender				
Male	22	8	14	44
Female	20	20	28	68

Awareness among male patients regarding diabetes was good in 50% of cases while 32% males were having bad knowledge of diabetic complications and fortunately 18% of male were having average knowledge about their disease.

Table No.2: Level of Awareness between literate and illiterate patients.

Parameters	Level of awareness			Total
	Good	Average	Bad	
Level of education				
Uneducated	24	24	34	82
High school/Inter	16	2	8	26
Graduate	4	0	0	4

While female patients were less aware of their disease as compared to males as evident from chart.

Level of awareness in illiterate patients was very poor only 29% among them were worried about their disease and aware of diabetic complications while 42% of them were least bother about their illness, while 29% of illiterate were having an average knowledge of their disease and its complications.

Patients who have passed their higher school and inter were having good awareness of their disease, only 31% of patients from this group were poorly aware of diabetes and its complications 8% were having average knowledge while 61% of patients were worried about diabetes and were aware of the complications associated with it in uncontrolled state.

Graduate patients included in our study were 100% aware of diabetes and its complications, while 19% of undergraduate patients (higher school / inter level) included in study were having poor knowledge of their disease.

Table No.3: Parameters regarding duration of DM and level of awareness among different ages of patients.

Parameters	Level of Awareness			Total
	Good	Average	Bad	
Duration of DM				
01-05 years	12	7	16	35
06-10 years	13	13	14	40
11-15 years	8	8	5	21
More than 15 years	12	3	1	16

Table No.4: Awareness of Different Complications

Complications	Positive Response	Negative Response
HTN	63	49
MI	58	54
CCF	65	47
Nephropathy	72	40
Eye problems	62	50
CVA/TIA	63	49
Infections	61	51
Foot ulcers	82	30
Dyslipidemia	30	82
Neuropathies	70	42
Gastroparesis	52	60
Autonomic diarrhea/constipation	4	108
Poor wound healing	80	32
Hypoglycemia	60	52
DKA/HONK	64	48

People with history of short duration of diabetes (1 to 5 years) were having poor knowledge of diabetes (46%), while only 34% and 20% respectively were having good and average knowledge of diabetes and its complications

With history of greater duration of diabetes (6 to 15 years) the level of awareness among patients was considerably better than in patients with history of diabetes of 1 to 5 years as evident from graphs.

Awareness among patients with history of diabetes of more than 15 years was very good 75% of them were knowing the complications of diabetes, only 6% were still not aware of the complications and 19% were having average knowledge of the disease.

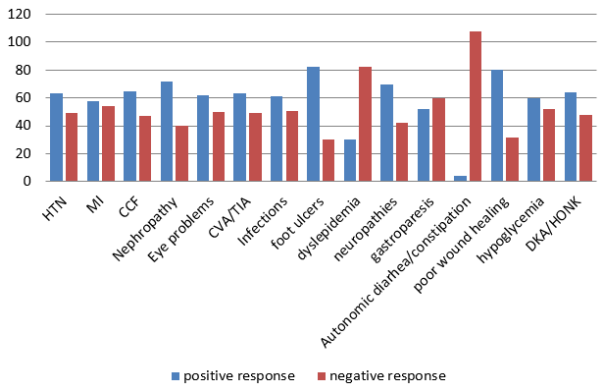

Figure No.1: Awareness of Different Complications

DISCUSSION

DM is a metabolic syndrome characterized by chronic hyperglycemia due to relative or absolute insulin deficiency or resistance or both. Being a life long illness and associated co-morbid conditions it may cause considerable economic burden on poor people of developing countries like Pakistan. Therefore, it is necessary to educate the diabetics regarding their disease and associated co-morbid conditions besides medical management.

In our study knowledge of the diabetics regarding co-morbid conditions were as follows: foot ulcers (73.21%), poor wound healing (71.42%), nephropathy (64.28%), neuropathies (64.28%), heart diseases including HTN, IHD, CCF (55.3%). A study conducted in the past also showed that 53.5% of diabetics were aware of cardiovascular diseases as a potential complication of diabetes[11.] Another study of the past showed the frequency of knowledge diabetic complications as follows: eyes (91.1%), kidneys (73%), heart (65%), feet (57.4%).[12] These figures roughly parallel with our findings except eye knowledge which in our study was 55.35% and foot ulcers of which our patients were more aware (73.21%).

Male patients were more knowledgeable than female patients in our study and this was also finding of Nisar et al[13]. This finding was also shown by another study in rural north west of Pakistan but it showed one more additional point that regarding suitable diet of diabetic's sex difference has no significant role[14].Another study also showed that males were more aware of their disease than females but it moved a step ahead by claiming that male patients were also more aware of active life style modifications like regular exercises than female diabetics [15].

We also concluded in our study that educated people were more aware of diabetes and its complications than uneducated patients. This was also finding of study conducted by Nisar e tal[13.] Another study in the past has also shown the high level of awareness among the educated people[16]; these findings were also observed in other studies as well[14,15].

This study has got few limitations, we conducted our study on admitted diabetic patients but this requires more generalized community based study. Second due to low literacy rate and shyness of our people, there is a possibility that most of people may have replied in yes to most of the questions in questionnaire resulting in overestimation of exact level of awareness.

CONCLUSION

It was concluded that level of awareness regarding diabetic complications was poor among females than in males, it was also poor among totally illiterate people as compared to people who have gone to schools and colleges up to inter level and was very good among the graduates. It was further concluded that people got aware of the diabetic complications as they themselves suffered from it with the passage of time. So this was the final conclusion of the study that we physicians should not only treat their disease but also give time to educate them so they have knowledge of diabetes and its complications before they suffered from it thus reducing significant morbidity and mortality.

Author's Contribution:

Concept & Design of Study:	Muhammad Abbas
Drafting:	Sarmad Raza, Jehandad Khan
Data Analysis:	Shahzeb, Jamal Nasir
Revisiting Critically:	Muhammad Abbas
Final Approval of version:	Muhammad Abbas

Conflict of Interest: The study has no conflict of interest to declare by any author.

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