The Complications of Diabetes and its Reasons

1st Dr.Muhammad Samiullah [1] 2nd Dr. Shehzeena Malik [2] 3rd Dr. Momina Masroor [3]

Abstract:

Diabetes Mellitus is worldwide increasing disease resulting from a complex interaction between a subject's genetic makeup and lifestyle, more importantly it has its complications which have a very disasterous end result. A descriptive cross sectional study was carried out among the Diabetics visiting OPD of Sheikh Zaid hospital Lahore associated with sheikh Zaid Medial College Lahore to check the ratio of patients with complications of diabetes to rule out the most common complications of diabetes regarding self-care to treat them.

Key words

- *Complications of Diabetes*
- *Sheikh Zaid Hospital*
- *Awareness*

Objectives

The objectives of this study are to get to know the most common complications in diabetic patients in our society and to provide awareness of underlying causes to prevent major complications.

Material and Methodology

A sample of around 50 diabetic patients visiting OPD of Sheikh Zaid Hospital Lahore were randomly selected and information gathered through filling the questionnaire to access gap in knowledge and practice regarding awareness of the complication of diabetes and its reasons among both male and female and the socioeconomic factors contributing to diabetes prone lifestyles.

Result

A study was carried out among diabetic patients in Sheikh Zaid Hospital OPD Lahore. Total 49 randomly selected patients (males 22 , females 27) were inducted in the study with ages above, equal or less than 50.

31 Diabetics had satisfactory knowledge and were doing satisfactory practice while 18 patients had unsatisfactory knowledge and were doing unsatisfactory practice.

Conclusion

According to our study most of the diabetics do have satisfactory knowledge about the awareness of diabetic complications and its reasons while others were illiterate or belonged to a lower socioeconomic class.

1. Introduction

Diabetes have been a major public health problem in Pakistan and specifically in developed countries. Diabetes Mellitus is a disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood. It is of three main types: Diabetes Type-I, Diabetes Type-II, Gestational Diabetes [1]

It's a prevailing condition with high morbidity and mortality, high rate of hospitalization with this non-communicable disease. According to WHO, global number of people will be more than double in the upcoming 25 years. [2]

2. Objectives

1. To determine the prevalence of Diabetes Mellitus.

2. To investigate the influence of socioeconomic status on the disease prevalence.

3. To know the knowledge of people regarding the complications of Diabetes.

Hypothesis

Null hypothesis

Socioeconomic factors and behaviour of diabetic patients are not associated with the complications of disease.

Alternative

Socioeconomic factors and behaviour of diabetic patients are associated with the complications of disease.

Purpose of the study/Rationale

According to WHO, death due to disease complications is due to ill attitude towards health is common in developing countries as well who have managed the eradicate some of the life threatening conditions.

In Pakistan the situation is more alarming. Every 10th person is appearing in OPD with diabetic foot or retinopathy related to diabetes, showing the high prevalence of complications. This study will highlight those practices which are supporting the disease to further complicating the situation.

Literature Search

The Research says of 3000 diabetic patients screened, 780 were diagnosed to have retinopathy. The incidence of the complication was higher in the age group of 50 years and above and of diabetes (76.7%).[3]

The Research showed overall prevalence of micro albuminuria was 34%. Mean age of subjects was around 50 years. 57% were Males and 43% were females. 45% had family history of diabetes.[4]

The study says that they included 96 patients, 28 Males and 58 Females with age ranging from 25-30. Analysis showed that 50% of males had good knowledge as compared to 31% females but this difference was not statically significant. Furthermore, it was found that longer the duration of Diabetes had slightly better knowledge regarding the complications.[5]

Indexes of Retinopathy and Nephropathy were studied in a large population of diabetics using standardized methods. In each of 973 subjects, more than 100 other variables were measured in relation to microangiopathy. The most powerful risk factor for microangiopathy was duration of diabetes, but frequency of both retinopathy and nephropathy was impressively related to the glucose level at the time of examination. In people whose systolic BP was greater than 169mmHg, rates of retinopathy were excessive. Rates of severe nephropathy were more in males than females, but rates of retinopathy were similar in both.[6]

The study says the pregnancy in women with diabetes is associated with increased risk of obstetric and neonatal complications, morbidity and mortality. The most common complication being the congenital abnormalities and malformations other than this there could be premature delivery and macrosomia. Maternal complications are pregnancy induced hypertension, preeclampsia, haemolysis, Caesarean section and retinopathy.[7]

Diabetes prevalence ranged from 2.6% in Rural Sudan to 20.0% Urban Egypt. Diabetes prevalence was significantly higher in urban areas than in rural areas. Undiagnosed diabetes is common in North Africa with prevalence ranging from 18% to 75%. The prevalence of chronic diabetes complications ranged from 8.1% to 41.5% for retinopathy, 1% to 22% for albuminuria, 6.7% to 46.3% for nephropathy and 21.9% to 60% for neuropathy.[8]

3. Material and methodology

Setting	Shaikh Zayed Medical College & PGMI Lahore.
Design	Descriptive Cross-Sectional Study.
Duration	6 Months.
Universe	All Diabetic Patients.

Variable

Predictor Variables: Age, Sex, Income, Level of Education, Lifestyle, Socioeconomic status, Health care facilities, Family History.

Outcome Variables: Type of Complication of the Diabetes.

Operational Definition: Patients diagnosed as diabetics and visiting OPD for treatment

Study subjects:

Inclusion: Willing, Patients above 30 with Type-II Diabetes

Exclusion: Unwilling patients, Gestational diabetes and Type-1 diabetes.

Sample size: 67 diabetic patients presenting in OPD

Sample technique: Convenient sampling (Non-probability)

Tools of measurements   Questionnaire   (Open   and   closed ended questionnaire.

4. Analysis

Table No. 1 Socio-demographic factors and the duration of disease are not associated with the complications of diabetes.

Gender	Frequency	Percent
Male	22	44.9
Female	27	55.1
Marital status		
Unmarried	1	2.0
Married	38	77.6
Widowed	9	18.4
Divorced	1	2.0
Education of respondent		
Literate	31	63.3
Illiterate	18	36.7
Education of spouse		
Literate	33	67.3
Illiterates	16	32.7
Occupation of respondent		
House Wife	22	44.9
Office Worker	8	16.3
Manual Worker	7	14.3
Businessman	3	6.1
Agricultural	4	8.2
Un employed	5	10.2
Occupation of spouse		
House Wife	21	42.9
Office Worker	5	10.2
Manual Worker	9	18.4
Businessman	6	12.2
Agricultural	5	10.2
Un employed	3	6.1
Age		
≤40	4	8.2
>40	45	91.8
Non healing sore		
Yes	7	14.3
No	42	85.7
Treatment taken from whom		
Doctor	48	98.0
Hakeem	1	2.0

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Table No.2

Check Glucose Level	Frequency	Percent
Daily	24	49.0
Weekly	17	34.7
Monthly	7	14.3
Rarely	1	2.0
Insulin		
Yes	38	77.6
No	11	22.4
Diabetes in your family		
Yes	26	53.1
No	23	46.9
Income per capita per month		
≤3000	11	22.4
>3000	38	77.6
Family member		
≤5	18	36.7
>5	31	63.3
Complication due to diabetes		
Yes	38	77.6
No	11	22.4
If yes complication		
Renal	9	18.4
Eyes	22	44.9
Heart	1	2.0
Sores on limbs	6	12.2
No	11	22.5
Symptoms Improved		
Yes	43	87.8
No	6	12.2
Treatment regular		
Yes	45	91.8
No	4	8.2
Wound on lower limb		
Yes	11	22.4
No	38	77.6
Fatigue		
Yes	40	81.6
No	9	18.4

Analysis n=49

Gender	Complication due to diabetes		Total	P-Value
	Yes	No		
Male	15	7	22	P=0.18
Female	23	4	27	
Age				
≤40	2	2	4	P=0.21
>40	36	9	45	
Education of respondent				
Literate	22	9	31	P=0.17
Illiterate	16	2	18	
Education of spouse				
Literate	25	8	33	P=1.00
Illiterate	13	3	16	
Family member				
≤5	11	7	18	P=0.07
>5	27	4	31	
Income per capita per month				
≤3000	10	1	11	P=0.2
>3000	28	10	38	
Insulin				
Yes	30	8	38	P=0.41
No	8	3	11	
Diabetes in your family				
Yes	19	7	26	P=0.50
No	19	4	23	
Treatment regular				
Yes	36	9	45	P=0.21
No	2	2	4	
Wound on lower limb				
Yes	10	1	11	P=0.42
No	28	10	38	
Fatigue				
Yes	30	10	40	P=0.56
No	8	1	9	
BMI				
≤25	18	6	24	P=0.67
>25	20	5	25	

5. Results

There was cross-sectional study of cases which included those suffering from Diabetes mellitus on the basis of consent from patients presenting in the outdoor clinic. The patients were interviewed using a pre-formed questionnaire. The data was compiled and was analyzed by the calculation of frequency, percentages, means and standard deviation of the variables. Categorical data was made. Out of 49 patients interviewed, 44.9% were male and 55.1% were Females. While 8.2% were above 40 years of age and 91.8% were below 40. The social economic status was analyzed and the income per capita was >3000 in 77.6% and <3000 in 22.4%. 63.3% were literate while 36.7% were illiterate. Total family members were >5 in 53.7%. The duration of illness after provisional diagnosis was >10 years in 27.8%, while it was <10 years in 72.2% of the patients. Total family members were >5 in 63.3%. There is positive diabetic family history in 53.1% cases. Out of 55.1% females striking 77.6% were married. 14.3% had Non Healing sores while 85.7% did not have any non-healing sores. Most of the patients of about 98% take the treatment from the doctors while only 2% took the treatment from Hakeem also. 77.6% of our patients were already using insulin while 22.4% were on oral medication. 77.6% of the patients had complications due to diabetes of which the most common complaint was complications related to Eyes of about 44.9%. 22.4% of the patients also had wounds on the limbs.

6. Discussion

This study was conducted over a period of six months. The data was collected on the basis of a simple questionnaire.

The main focus, however, was diabetes and its complications presenting to the Shaikh Zayed Hospital OPD. The reasons listed in the questionnaire were family history, BMI, wound on limb, fatigue, Education, family history of diabetes, Income per Capita per month.

The null hypothesis was developed on the notion that behaviors and socioeconomic status had no relation with the complications of diabetes; this was proved to be wrong after achieving insignificant results during the analysis of the collected data. We speculate that these insignificant values may be due to a small sample size; a total 49 patients were interviewed.

7. Conclusion

According to the data collected and analyzed, the results were conclusive of the fact that behaviors and socioeconomic statuses have no relationship with the Complications of diabetes mellitus. Hence, the null hypothesis was proved to be correct.

8. Recommendation

Modification of Diet and lifestyle to avoid getting the disease.
Constant monitoring of the Blood Glucose levels Maintain good self-care and good hygiene.
Develop good compliance and take regular medication as prescribed.

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