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Original Research

To determine prevalence of nonadherence to diabetic medication - A community based study

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***ABSTRACT*:**

Background: Medication-taking behavior is complex and involves patient, clinician, and health system factors. The present study was conducted to determine prevalence of nonadherence to diabetic medication. **Materials & Methods:** The present community based study was conducted on 128 patients of type II diabetes mellitus of both genders. Place of treatment, satisfaction, cost of treatment, type of treatment, satisfaction with treatment and perceived knowledge about diabetes, complications, and effects of missing doses were also recorded. Medication adherence was measured using Morisky Medication Adherence Scale. **Results:** Out of 128 patients, males were 88 and females were 40. There was high significant difference in non- adherence to diabetic medication (P< 0.05). Reason for poor adherence were poor knowledge about disease in 45, myths in 63, distance from medical facility in 19, cost of treatment in 35, lack of satisfaction in 30 and forget to take medication in 42. The difference was significant (P< 0.05). **Conclusion:** Reason for poor adherence was poor knowledge about disease, myths, distance from medical facility, cost of treatment, lack of satisfaction and forget to take medication.

Key words: adherence, diabetes, knowledge.

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INTRODUCTION

Diabetes mellitus (DM) is a group of common metabolic disorders that share the phenotype of hyperglycemia, which are caused by a complex interaction of genetics and environmental factors. The prevalence of diabetes is rapidly rising all over the world. It has now become the disease of morbidity and mortality affecting the youth and middle aged people. Type 2 diabetes mellitus has higher prevalence rate all over the world which accounts for more than 90 percent of all diabetes cases., but number of type I diabetes mellitus cases is increasing excessively nowadays.[1]

Diabetes is considered to be one of the most psychologically and behaviorally demanding of the chronic diseases and it requires frequent self‑monitoring of blood glucose, dietary modification, diet, and administration of medication under schedule. Medication nonadherence is common among diabetics and it is one of the leading public health challenges. In a resource-poor country like India with low literacy levels and restricted access to health‑care facilities, the prevalence of medication nonadherence is much more common.[2]

Medication-taking behavior is complex and involves patient, clinician, and health system factors. Patient factors that influence adherence include lack of involvement in the treatment decision– making process, poor health literacy, personal and community beliefs regarding medication effectiveness, and previous experiences with pharmacologic therapies (eg, adverse effects).[3] Clinician factors include failure to recognize nonadherence, prescription of complex and multidrug regimens, ineffective communication of benefits, and inadequate communication between prescribers (ie, specialists and primary care clinicians). Health system factors include

medication co-payments and poor coordination of care between inpatient and outpatient settings. The multiplicity of reasons related to patient, clinician, and health system factors make nonadherence a challenging problem to address.[4] The present study was conducted to determine prevalence of nonadherence to diabetic medication.

MATERIALS & METHODS

The present community based study was conducted in the department of Community Medicine. It comprised of 128 patients of type II diabetes mellitus of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee.

General information such as name, age, sex etc. was recorded. Place of treatment, satisfaction, cost of treatment, type of treatment, satisfaction with treatment and perceived knowledge about diabetes, complications, and effects of missing doses were also recorded. Medication adherence was measured using Morisky Medication Adherence Scale. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Gender	Males	Females
Number	88	40

Table I shows that out of 128 patients, males were 88 and females were 40.

Table II various factors associated with low adherence for treatment

Parameters	Number	n (%) with low adherence score	P value
Hypertension			
Present	68	40	0.42
Absent	60	20	
Pace of treatment			
Private	18	12	0.12
Government	110	80	
Doctor-Patient relationship			
Satisfied	98	56	0.01
Not satisfied	30	14	
Perceived knowledge about diabetes			
Present	102	94	0.02
Absent	26	11	

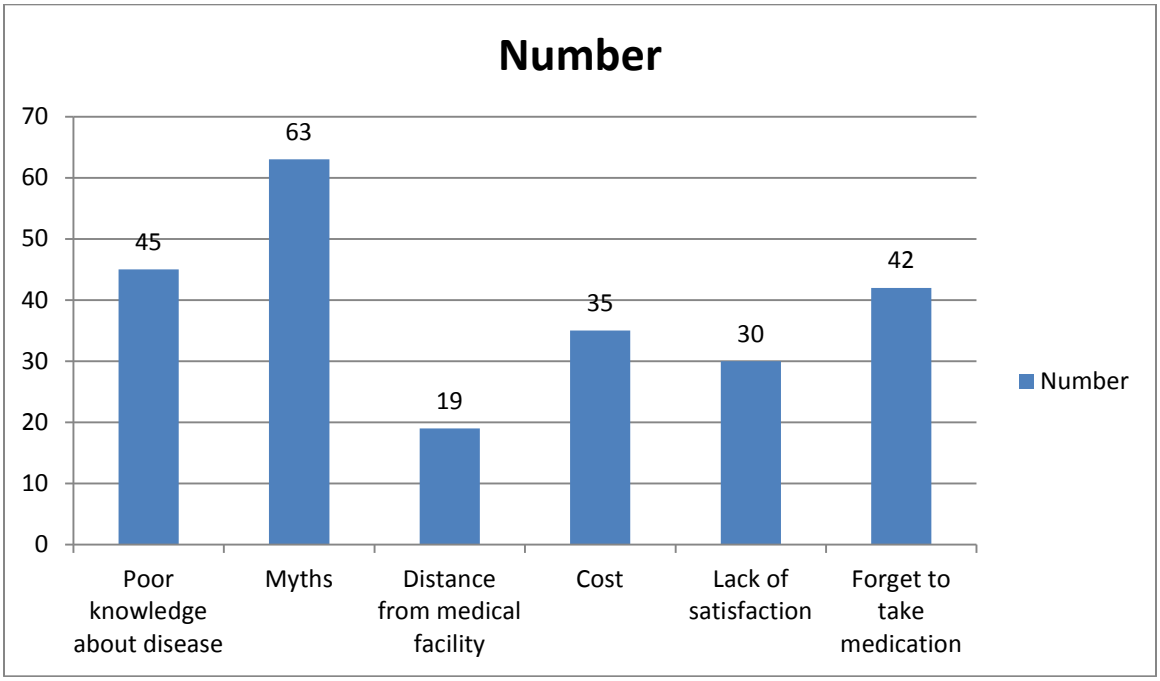
Table II shows that there was high significant difference in non- adherence to diabetic medication (P< 0.05).

Table III Reason for poor adherence

Reason	Number	P value
Poor knowledge about disease	45	0.05
Myths	63	
Distance from medical facility	19	
Cost	35	
Lack of satisfaction	30	
Forget to take medication	42	

Table III shows that reason for poor adherence was poor knowledge about disease in 45, myths in 63, distance from medical facility in 19, cost of treatment in 35, lack of satisfaction in 30 and forget to take medication in 42. The difference was significant (P< 0.05).

Graph I Reason for poor adherence



DISCUSSION

Adherence to medication is an essential component of health outcome, so by increasing medication adherence we can also improve patient outcomes. Even the most carefully chosen and optimal medication can be rendered ineffective by insufficient adherence. Failure of medication adherence leads to substantial worsening of disease, death and increased healthcare costs. In other words, non-adherence affects both the individual patients and the healthcare system. Studies have shown that patients with good adherence to treatment had both a lower rate of mortality.[5]

Among adults with chronic illness such as diabetes or hypertension, between 30% and 50% of medications are not taken as prescribed. Poor adherence is associated with increased morbidity and mortality and may account for approximately 125 000 deaths and 10% of hospitalizations in the United States annually.[6] Nonadherence is also a significant contributor to health care costs: it is estimated that $100 billion annually is spent on US health care services that are directly related to poor medication adherence, such as successive hospitalizations and increased need for medical interventions. Over the last 15years, studies have been conducted in an effort to improve rates of medication adherence, but the rate of medication nonadherence has not appreciably improved.[7] The present study was conducted to determine prevalence of nonadherence to diabetic medication.

We found that out of 128 patients, males were 88 and females were 40. There was high significant difference in non- adherence to diabetic medication (P< 0.05). Venkatesan et al[8] found the prevalence of nonadherence to diabetic medication and to identify various factors associated with it. It was conducted among 328 type 2 diabetic patients. The quantitative data were collected from diabetic patients and qualitative data from health‐care providers to identify their perceived barriers for patient's nonadherence. The prevalence of low adherence to diabetic medication was 45.4% among the study population. Bivariate analysis shows significant association with the patients who are literate, hypertensive, taking treatment from private facility perceived lack of satisfaction with doctor–patient relationship and perceived lack of knowledge about diabetes with low adherence to medication.[9]

Significant factors associated with low adherence for medication are illiterate, not having comorbid condition such as hypertension, poor satisfaction with government health facility, perceived poor satisfaction with doctor–patient relationship, perceived lack of knowledge about diabetes, perceived lack of knowledge about effect of missing doses, and initial years of having diabetes. Qualitative analysis shows that the common reasons are lack of knowledge about disease, distance, travel, lack of transport to health facility, inaccessible timing of the health facility, cost of drugs in private hospitals, and side effects.[10]

We found that reason for poor adherence was poor knowledge about disease in 45, myths in 63, distance from medical facility in 19, cost of treatment in 35, lack of satisfaction in 30 and forget to take medication in 42.

Medication-taking behavior is complex and involves patient, clinician, and health system factors. Patient factors that influence adherence include lack of involvement in the

treatment decision– making process, poor health literacy, personal and community beliefs regarding medication effectiveness, and previous experiences with pharmacologic therapies.[11] Clinician factors include failure to recognize nonadherence, prescription of complex and multidrug regimens, ineffective communication of benefits, and inadequate communication between prescribers (ie, specialists and primary care clinicians). Health system factors include medication co-payments and poor coordination of care between inpatient and outpatient settings. The multiplicity of reasons related to patient, clinician, and health system factors make nonadherence a challenging problem to address.[12]

CONCLUSION

Authors found that reason for poor adherence was poor knowledge about disease, myths, distance from medical facility, cost of treatment, lack of satisfaction and forget to take medication.

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