



# TO ASSESS THE THERAPEUTIC COMPLIANCE FROM THE PATIENTS PERSPECTIVE ON DIABETES MELLITUS IN ADESH HOSPITAL BATHINDA

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## ABSTRACT

**Objective:** To assess the adherence to patients their medications, patient knowledge about their disease and Counselling regarding the disease and drugs taken. The prospective observational study was conducted in

Medicinal Department, Adesh Institute of Medical Sciences and Research, Adesh Hospital, Bathinda after getting approval from the Ethical Committee of Adesh University.

**Methods:** In order to know the medication adherence (MA) of the patient towards treatment they were provided with specially designed questionnaire i.e., Morisky Medication Adherence scale of 8-item questions, and also their follow up of the medication adherence has rechecked.

**Result:** A total of 385 patients were recruited in the study. All the patients who were participate in the study agreed to participate. A total of 385 patients between 30 and 84 years of age were included in the study. The majority of the patients were men (n = 215, 55.8%). Approximately male (55.8%) and female (44.2%) of the study population, in Adesh hospital. The mean age of the study population was 5.32 ( $\pm$ .045) years (range 30–84 years). A small percentage 5 (1.3%) was below the age of 39 years, 57(14.8%) patients ages between 40-49, 169 (43.9%) patients ages between 50-59, 116(30.1%) patients ages between 60-69, 38 (30.1%), patients ages more than 70 (9.9%) year. The no of employed are 80(20.8%) and non-employed are 305 (79.2%).

**Conclusions:** Diabetes patients highly occur in village due to lack of awareness about the disease, eating in very fast foods, in the study male higher than female affected due to DM and in education level educated are good responses than uneducated patients in medication adherence. Maximum no of patients less than 5 year's duration of diabetes mellitus.

**Keywords:** Diabetes mellitus, medication Adherence, compliance, life style

## INTRODUCTION:

The purpose of this study was to measure the rate of adherence among Iraqi patients with diabetes. The rate of adherence to medication regimens and lifestyle advice was unsatisfactory in this study group. The awareness of diabetic patients and their caring physicians about the importance of adherence to therapy, exercise, and diet should be emphasized [1]. Diabetes mellitus is a growing cause of disease burden globally. Its management is multifaceted, and adherence to pharmacotherapy is known to play a significant role in glycaemic control. The level of adherence and factors influencing non-adherence to anti-diabetic medication among patients with type-2 diabetes was assessed and Adherence to anti-diabetic medication is poor in this study with more than half of participants being non-adherent[2]. Diabetes mellitus is undoubtedly one of the fastest growing public health problems worldwide. There were 415million people living with diabetes in 2015, with a projected 642 million by 2040. Also significantly affecting rural and low socioeconomic populations. Also, diabetes is not only a disease of the elderly as about 50% of the patients are aged between 40 and 59 years [3]. Diabetes mellitus consists of an array of dysfunctions characterized by hyperglycaemia and resulting

from the combination of resistance to insulin action, inadequate insulin secretion, and excessive or inappropriate glucose secretion. India has the largest population of diabetes patients when compared to any other country, diabetes deaths accounts for 9.7%. Insulin is the most effective glucose lowering agent and is a key component of effective diabetes management over the course of diabetes. Diabetes is a chronic condition in which evidence clearly links improved metabolic control via drug therapy to better outcomes [4]. These desired outcomes are part and parcel of the objectives in the management of the diseases or conditions. The ultimate aim of any prescribed medical therapy is to achieve certain desired outcomes in the patients concerned. This shortfall may also have serious and detrimental effects from the perspective of disease management. However, despite all the best intention and efforts on the part of the healthcare professionals, those outcomes might not be achievable if the patients are noncompliant. Therapeutic compliance not only includes patient compliance with medication but also with diet, exercise, or life style changes. Hence, therapeutic compliance has been a topic of clinical concern since the 1970s due to the widespread nature of non-compliance with therapy. The rate of compliance for short-term therapy was much higher at between 70% and 80. it was estimated that the compliance rate of long-term medication therapies was between 40% and 50%, while the compliance with lifestyle changes was the lowest at 20%–30% (5).[6]. Patients' adherence to their anti-diabetic medications is a critical and important factor to prevent serious undesirable complications and to reduce the health care resource utilizations [7]. Adherence behaviours in patients with type-2 diabetes include five categories: adherence to medication, dietary recommendations, increased physical activity, self-control of blood glucose, and proper care of legs [8]. Failure to adhere to the therapeutic regimen accelerates the complications of diabetes.

## **MATERIAL AND METHOD:**

The prospective observational study was conducted in Medicine Department Bathinda after getting approval from the Ethics Committee of Adesh University (Letter No. AU/CoE/TP/Pharm/05/135(a)) and Written consent in the language known to the patient were taken before including the patient in this study. The prescriptions were collected from the diabetes patient's over the period of 6 months from the medicine department and analyse for pattern of drugs therapy given by physician. Patients of all age group of either sex suffering from diabetes in the outpatient department and having two or more drugs in their prescription were included in the study. Pregnant and lactating women and patients requiring hospitalization were excluded in the study. Data of the all patients viz, case history, diagnosis, adherence, a drug prescribed with their dose and frequency of administration will be collected and subjected to drug utilization study and Pharma economic study.

## Statistical Analysis:

Data were collected and analysis was done using SPSS for Windows version 20.0 software (SPSS, Inc., Chicago, IL, USA). Frequency and percentage were used to represent gender, age group, number of interaction and number of drugs used by the patients.

## RESULTS:

A total of 385 patients between 30 and 84 years of age were included in the study. The majority of the patients were men (n = 215, 55.8%). Approximately male (55.8%) and female (44.2%) of the study population, in Adesh hospital. The mean age of the study population 15 was 5.32 ( $\pm$ .045) years (range 30–84 years). A small percentage 5 (1.3%) was below the age of 39 years, 57(14.8%) patients ages between 40-49, 169 (43.9%) patients ages between 50- 59, 116(30.1%) patients ages between 60-69, 38 (30.1%) patients ages more than 70 (9.9%) year. The no of employed are 80(20.8%) and non-employed are 305 (79.2%). 4.1Demographic profile of the patient 4.1.1 Gender of patients 385 (N) Participants are respondents maximum 215 (55.8) male gender and 170 (44.2) females.

### 4.1 Demographic profile of the patient

#### 4.1.1 Gender of patients

385 (N) Participants are respondents maximum 215 (55.8) male gender and 170 (44.2) female.

#### 4.1 Table and graph

Gender of patients

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	215	55.8	55.8	55.8
	FEMALE	170	44.2	44.2	100.0
	Total	385	100.0	100.0	

Table 4.2

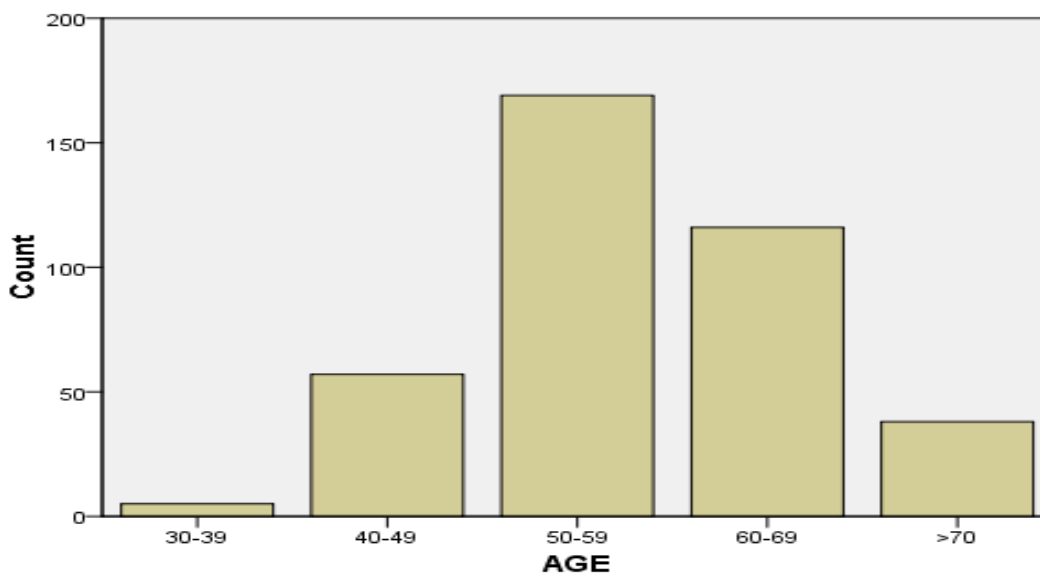
Age category

		Frequency	Percent	Valid Percent	Cumulative Percent
Age	30-39	5	1.3	1.3	1.3
	40-49	57	14.8	14.8	16.1
	50-59	169	43.9	43.9	60.0
	60-69	116	30.1	30.1	90.1
	>70	38	9.9	9.9	100.0
	Total	385	100.0	100.0	

out of 385 patients maximum no of patients were in age group of 50-59 years i.e 169 (43.9%) followed by 5(1.3%) patients ages between 30-39, 57(14.8%) patients ages between 40-49, 116(30.1%) patients ages between 60-69, 38 (30.1%), patients ages >70 (9.9%) year.

The detailed description is given in table no 4.2

Fig no. 4.2



#### 4.1.3 Residence of the patient.

Table no.4.3

RESIDENCE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	URBAN	113	29.4	29.4	29.4
	RURAL	272	70.6	70.6	100.0
	Total	385	100.0	100.0	

In table 29.4% urban and 70.6 % rural patients

#### 4.1.4 Education level of the patient

Table no.4.4

EDUCATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LITERATE	155	40.3	40.3	40.3
	ILLITERATE	230	59.7	59.7	100.0
	Total	385	100.0	100.0	

Patients are smoking habits and show the table no.4.5

Table no.4.5

SMOKING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non Smoker	300	77.9	77.9	77.9
	Smoker	85	22.1	22.1	100.0
	Total	385	100.0	100.0	

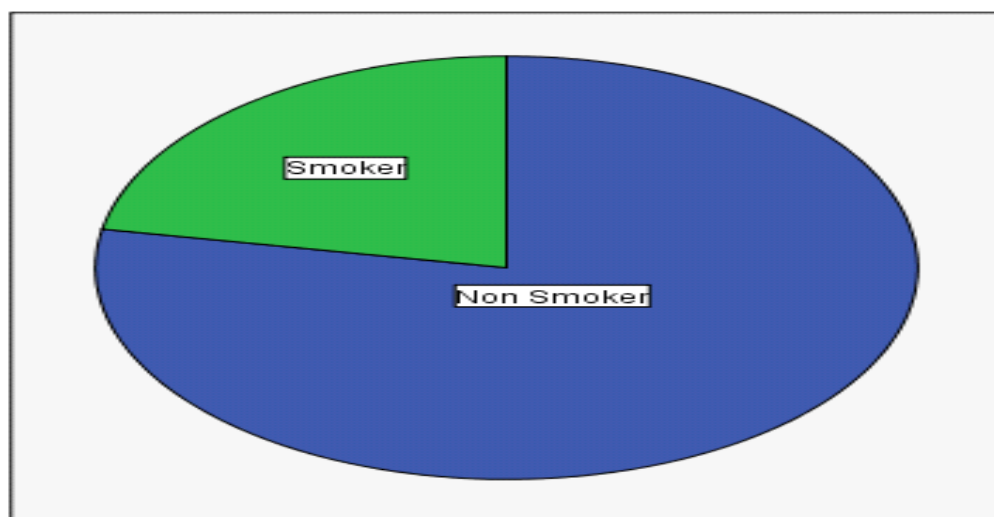


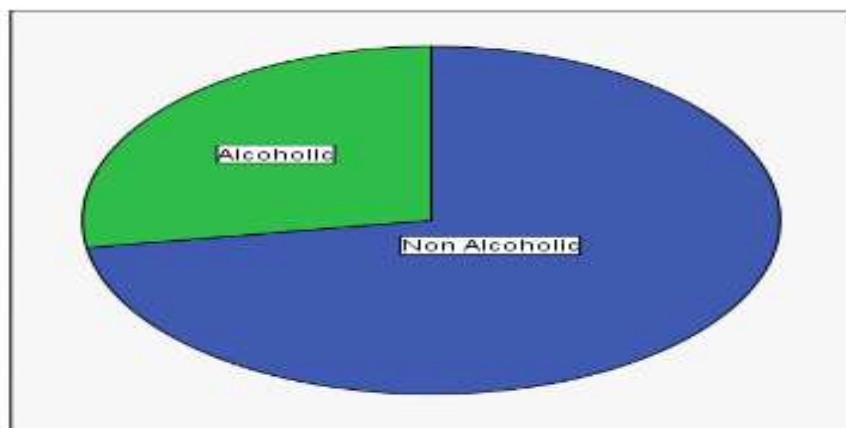
Fig no 4.3 smoking habits

Alcoholic habits affected the patients’ health and given table no 4.7

Table no.4.6

ALCOHOLIC					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non Alcoholic	279	72.5	72.5	72.5
	Alcoholic	106	27.5	27.5	100.0
	Total	385	100.0	100.0	

FIG NO 4 .4 Alcoholic habits



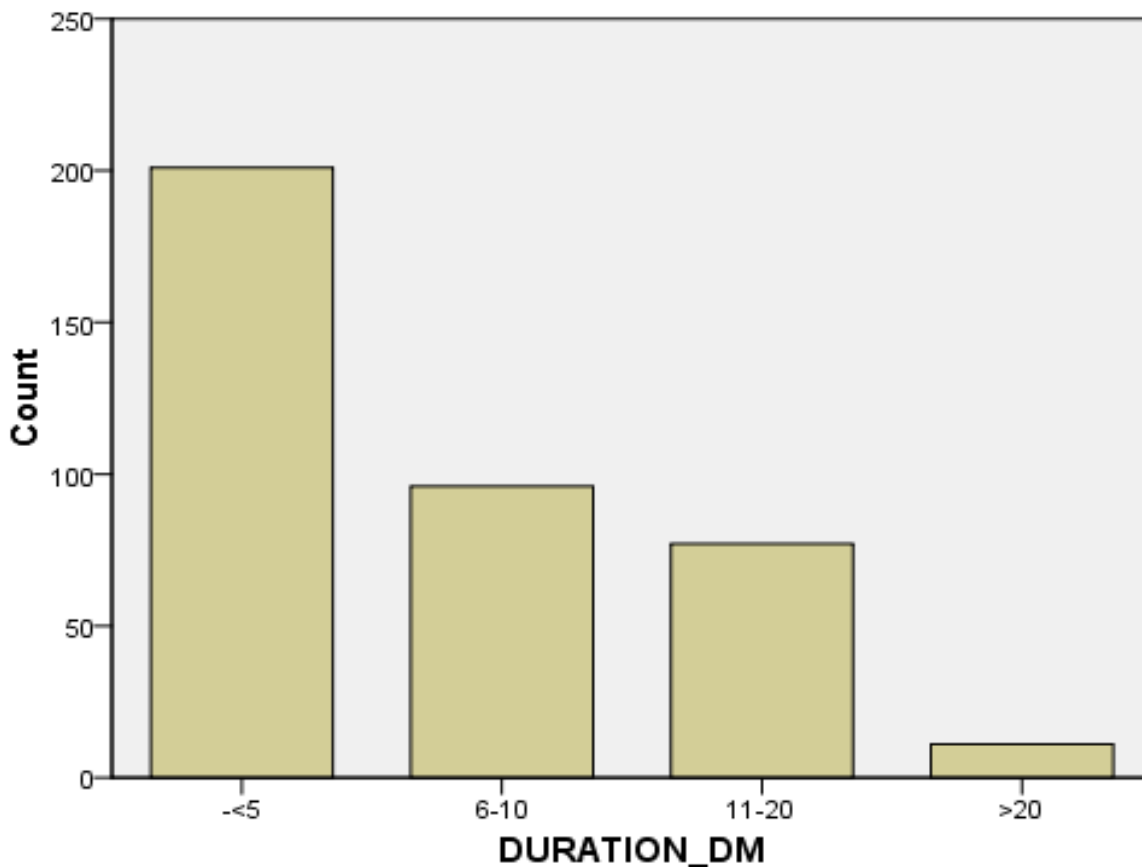
4.1.5 Duration DM of the patient.

The maximum no patients less than duration of 5 DM years and minimum no of patients duration of DM greater than 20 year table no 4.7

Table no 4.7

DURATION_DM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5	201	52.2	52.2	52.2
	6-10	96	24.9	24.9	77.1
	11-20	77	20.0	20.0	97.1
	>20	11	2.9	2.9	100.0
	Total	385	100.0	100.0	

Fig no 4.5 Duration of DM



4.1.6 Diabetes are genetically disorder as given table no 4.8

Table no.4.8

FAMILY_HISTORY					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	241	62.6	62.6	62.6
	YES	144	37.4	37.4	100.0
	Total	385	100.0	100.0	

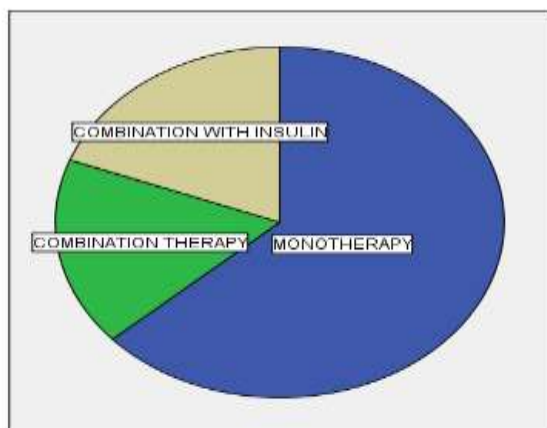
The Glucose level high the control the glucose choose the therapy given in table no 4.9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MONOTHERAPY	244	63.4	63.4	63.4
	COMBINATION THERAPY	67	17.4	17.4	80.8



COMBINATION WITH INSULIN	74	19.2	19.2	100.0
Total	385	100.0	100.0	

Figure no.4.6



There was no significance relationship between age, gender, residential area (urban/rural), type and duration of diabetes, type of medication, or education level, and whether a patient took their medication on time. Similarly, there was no significant relationship between age, gender, residential area, type and duration of diabetes, or education level, and following their dietary instructions. Likewise, residential area and duration of diabetes had no effect on physical activity.

4.1.8 Medication adherence of patients

Table no 4.10

ADHERENCE STATUS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Low Adherence	11	2.9	2.9	2.9
	Low Adherence	26	6.8	6.8	9.6
	Medium adherence	132	34.3	34.3	43.9
	Adherence	106	27.5	27.5	71.4
	High Adherence	110	28.6	28.6	100.0
	Total	385	100.0	100.0	

The Adherence of mean 3.72, Std. deviation 1.040 and standard error mean .053

Out of 385 DM patients were 169 non adherent and 216 Adherent, On the basis of questionnaire for their anti-diabetic drug High adherence 110 (28.6%) of the patients claimed that they had excellent tendency to take medication with the agreed recommendation from health care provider, 106 (27.5%) Adherence, 132 (34.3%) Medium adherence, 26 (6.8%) said they had poor adherence, and 11(2.9%) very low adherence, In self-report

for the pattern of drug use, 178 (51.3%) of patients said that they had never missed (neither daily dose nor time of taking) dose, 127 (36.6%) missed either daily dose or time of taking some times and 42 (12.1%) missed either dally dose or time of taking.

Figure no.4.7

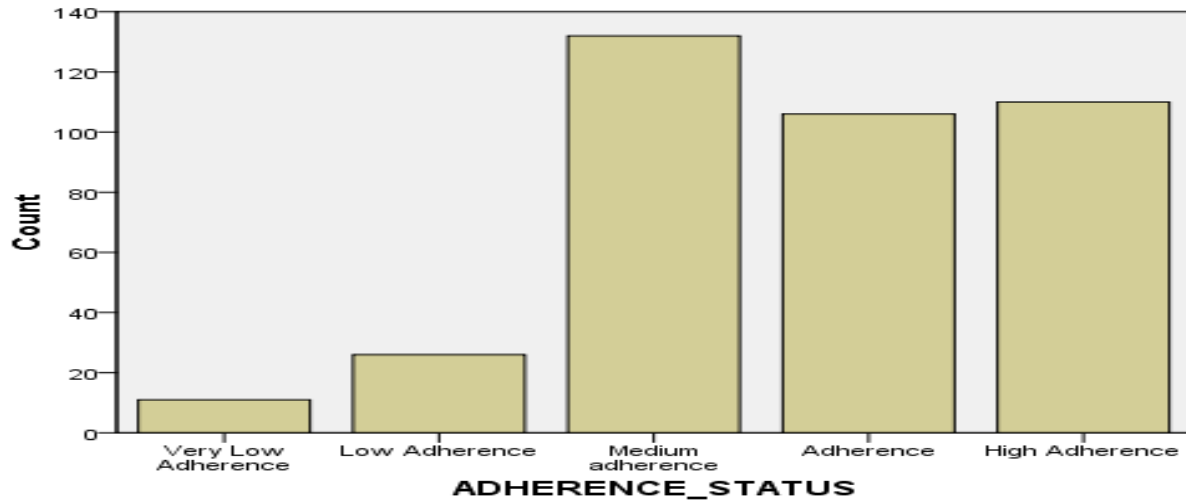


Table no.4.11

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
ADHERENCE_STATUS	385	3.72	1.040	.053

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
ADHERENCE_STATUS	70.230	384	.000	3.722	3.62	3.83

The mean and percentage of patients given above table no 4.16

## Discussion:

A total of 385 patients were included in the study. This study found the adherence of mean 3.72, Std. Deviation 1.040 and stand error mean .053 Out of 385 patients were 169 non adherent and 216 Adherent. On the basis of questionnaire the range of medication adherence for their anti-diabetic medication High adherence 110 (28.6%) of the patients claimed that they had excellent tendency to take medication with the agreed recommendation from health care provider, 106 (27.5%) Adherence, 132 (34.3%) Medium adherence, 26 (6.8%) said they had poor adherence, and 11(2.9%) very low adherence In self-report for the pattern of drug use, 178 (51.3%) of patients said that they had never missed (neither daily dose nor time of taking) dose, 127 (36.6%) missed either daily dose or time of taking some times and 42 (12.1%) missed either dally dose or time of taking. the majority of the patients were men (n = 215, 55.8%). Approximately male (55.8%) and female (44.2%) of the study population, in Adesh hospital. The mean age of the study population was 5.32 ( $\pm$ .045) years (range 30–84 years). A small percentage 5 (1.3%) was below the age of 39 years, 57(14.8%) patients ages between 40-49, 169 (43.9%) patients ages between 50-59, 116(30.1%) patients ages between 60-69, 38 (30.1%), patients ages more than 70(9.9%) year. The no of employed are 80(20.8%) and non-employed are 305 (79.2%)

## Conclusion

Diabetes due to unbalance of insulin in human body it is more common in India and prevalence of diabetes most occurs in north side India. In this study it was found the medication adherence were high, moderate and low on the basis of questionnaire but the main reason of medication adherence were less time of drug prescriber for the patients and not proper counselling of patients to their medication and there disease, in Diabetes patients highly occur in village due to lack of awareness about the disease, eating in very fast foods, in the study male higher than female affected due to DM and in education level educated are good responses than uneducated patients in medication adherence maximum number of patients less than 5 years duration of diabetes mellitus

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Conflict of interest: None declared

Ethics approval: The study was approved by the Ethics Committee Adesh University (Letter No. AU/CoE/TP/Pharm/05/135(a))

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