

## Original Article

# Medication Adherence among Mentally Ill Patients with comorbid- Substance Use Disorder

### Summary

Substance misuse is usually associated with poorer psychiatric medication adherence among mentally ill patients. Identifying proportion & predictors of medication adherence among patients with dual psychiatric and substance misuse problems is important because poor adherence is associated with relapse and re-hospitalization. This study was a descriptive cross sectional study conducted among the patients dually diagnosed with psychiatric and substance use disorders attending OPD in a tertiary care hospital of Dhaka city, during the period from May 2013 to November 2013. The main objective of the study was to explore the proportion of psychotropic medication adherence among the respondents who were on such medication for at least last 6 months (N=151). Respondents were selected purposefully. An informed consent was taken from the patients or care givers and data were collected using the questionnaire designed by the researcher based on Factors Influencing Neuroleptic Medication Taking Scale (FNIMTS). Diagnoses were done previously according to DSM-IV TR by psychiatrist appointed in inpatient and outpatient department. Questionnaire was filled up by the researcher by interviewing the patients and attending care givers as needed. Over half of the respondents (57.0%) admitted they had missed taking their medications on more than one occasion in the week prior to the interview. Thus this study found the proportion of medication adherence to be 43% among the respondents.

### Introduction

Adherence literally means the fact of behaving according to a particular rule<sup>1</sup>. The general term of adherence was defined by the World Health Organization (WHO) in their June 2001 meeting as 'the extent to which a patient follows medical instructions'<sup>2</sup>. DSM- V has included it in 'Other conditions that may be a focus of clinical attention' and recommended that non adherence to medical treatment category should be used only when the problem is sufficiently severe to warrant independent clinical attention and does not meet diagnostic criteria for psychological factors affecting

other medical conditions<sup>3</sup>. Patients who take medications as directed and agree with the provider about the recommendations are considered adherent. Persistence is a method of assessing adherence based on the percentage of doses taken, with no gaps in treatment<sup>4</sup>. Poor medication adherence is a vexing clinical problem for many chronic disorders in medicine including mental illness<sup>5</sup>. In recent times, psychopharmacological agents have become central in the management of severe mental disorders. Sadly, it is estimated that approximately half of individuals with chronic mental illness are not or poorly adherent with their medications<sup>6</sup>. The successful and safe use of

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relationship between patient and doctor. It is clearly important to recognize that the use of drug treatment particularly in psychiatry, requires a thorough understanding of the patients attitude to both their illness and its treatment<sup>7</sup>. Treatments that involve complex procedures, are hard to follow, have unpleasant side effects, take a while to produce the desired effect, and are either unavailable or difficult to access may increase the chances of poor compliance. The characteristics of the patient, such as the presence of comorbid mental illness and substance use disorders (SUDs), can greatly affect treatment compliance<sup>8</sup>.

Dual diagnosis is the term used to describe patients with both severe mental illness (mainly psychotic disorders) and problematic drug and/or alcohol use. Personality disorder may also co-exist with psychiatric illness and/or substance misuse. The term originated from the USA in the 1980s and has been adopted in the UK more recently. The nature of the relationship between the two conditions is well established and may be genetically linked<sup>9,10</sup>. A primary psychiatric illness may precipitate or lead to substance misuse. Patients may feel anxious, lonely, bored, have difficulty sleeping or may want to 'block out' symptoms or medication side-effects. Substance misuse may worsen or alter the path of a psychiatric illness. Intoxication and/or substance dependence may lead to psychological symptoms. Substance misuse and/or withdrawal may lead to psychiatric symptoms or illness. It may act as a trigger in those who are predisposed<sup>11</sup>.

People with dual diagnosis have complex needs relating to health, social, economic and emotional stressors or circumstances which can often be exacerbated by their substance misuse. Efforts to provide support for individuals with a dual diagnosis present a major challenge<sup>12</sup>. Dual diagnosis is associated with: Worsening psychiatric symptoms, more frequent re hospitalisation, poor physical health, poor medicine adherence and others<sup>13,14</sup>. Studies have documented that treatment compliance can be affected by the concurrent presence of substance abuse. In patients with schizophrenia, medication noncompliance has been significantly associated with substance abuse, this in turn with a greater symptom severity than other groups. For patients with bipolar disorder (BD), noncompliance was significantly associated with the presence of a comorbid SUD, and the most common reported reason was denial of need for treatment. In a study by Weiss et al. (1998), compliance was significantly associated with treatment with divalproex (Depakote), compared to

treatment with combined lithium (Eskalith, Lithobid). The study also showed that patients with BD and SUD who were prescribed benzodiazepines, neuroleptics and tricyclic antidepressants tended to take more medication than prescribed.

With regard to comorbid personality disorders and SUDs, results are not conclusive. However, borderline and antisocial personality disorders predict lower treatment retention rates. In addition, the concurrent presence of Axis II disorders on top of the Axis I disorders and SUD seems to worsen treatment compliance even more. A study showed that inpatients with triple comorbidity (Axis I and Axis II disorders plus SUD) were less likely to be compliant with the treatment plan than those without triple comorbidity<sup>8</sup>. In one study it was found that "substance-abusing patients with schizophrenia were 13 times more likely than non-substance-abusing patients to be noncompliant with antipsychotic medication." Among the reasons for this association is the fact that psychiatrists often tell patients to not drink alcohol when on medication (they therefore stop medication so they can drink) and the fact that some medications counteract the effects of the alcohol or drugs (so the person cannot experience their desired high)<sup>15</sup>.

Although estimates of non-adherence vary widely depending on the population, the method of reporting noncompliance, and the medication being monitored, non-adherence rates ranging from 29% to 46% have been reported in samples of psychiatric patients<sup>16</sup>. Rates of antipsychotic medication non adherence are reported to average between 41.0% and 49.5%, depending on the definition of adherence<sup>5</sup>.

In Bangladesh mental health services are poorly developed and largely out of reach of many who require it. There are 50 outpatient mental health facilities available in the country. These facilities treat about 26 users per 100,000 general populations. The users treated in outpatient facilities are primarily diagnosed with schizophrenia (30%), mood disorder (20%) and neurotic disorder (20%)<sup>17</sup>. A national survey in 2003-2005 reported 16.05% of the adult population in the country suffering from mental disorder<sup>18</sup>. However how much facilities we have can be maximum utilized when patients get 100% out of it. It would be possible if they become adherent to treatment. During literature review only one study conducted in our country regarding adherence to psychiatric treatment was found. The study was conducted among 145 randomly selected patients attending outpatient department of National Institute of-

Mental Health, Dhaka in the year 2003. The overall noncompliance was found in 104 patients (71.72%). Noncompliance regarding taking medication in appropriate dose was observed in 69% patients. A large number of patients (68.3%) also admit that they do not take the medication as long as advice by the physician. A significant number of patients (75%) do not take all the prescribed medicines and drop some of them without any reasonable cause. A group of patients who were vulnerable for noncompliance were the younger patients, the less educated, the low socioeconomic group and the patients who suffer for a longer time<sup>19</sup>. The purpose of this study was to find out proportion and some associated factors of non adherence of patients attending psychiatric out door in our country. As Bangladesh is far behind the demand of facilities of mental health we should utilize the available resources to its maximum.

## Methods and materials

This was a descriptive cross sectional study conducted among the patients of SUD attending the outpatient department of National Institute of Mental Health, Dhaka. The duration of study was seven months, starting from May 2013 to November 2013. In the study design, convenience sampling technique was used and a sample size of 151 was taken which is a valid sample size for this type of sampling technique to conduct a scientifically sound study. A total 151 respondents of 18 to 60 years were selected purposefully according to inclusion criteria and informed written consent was taken from each patient and his or her attendant.

During data collection, a semi-structured questionnaire designed by the researcher based on Factors Influencing Neuroleptic Medication Taking Scale (FNIMTS) containing socio-demographic and other variables was used. Diagnostic & Statistical Manual IV (DSM-IV) was applied previously. Medication adherence was determined by self report and for the purpose of the study confined to the week prior to interview. Data were analyzed using Statistical Package for Social Sciences (SPSS), version 15.0 for Windows. Ethical clearance was taken from the ethical clearance committee of NIMH. The main objective of the study was to explore the proportion of psychotropic medication adherence among the respondents who were on such medication for at least last 6 months and also having comorbid SUD.

## Results

The main objective of the study was to explore the proportion of medication adherence and to find out socio demographic profile of the respondents. A total of 151 adults of 18 to 60 years attending in the OPD were included in the study. The participants' rate was 100%.

### Proportion of medication adherence

Medication adherence was found to be 43% as the respondents admitted that they had not missed taking their medications on more than one occasion in the week prior to the interview. Table 1.1 illustrates this result.

Medication adherence	Frequency (%)
Present	65 (43.0)
Absent	86 (57.0)
Total	151 (100.0)

**Table 1.1** Proportion of Medication Adherence among the respondents (n=151)

### Clinical profile

#### DSM-IV diagnoses:

Respondents were selected having treatment for any psychiatric disorder diagnosed by psychiatrist using DSM IV-TR. All the included patients had dual diagnosis of psychiatric disorder and co-morbid SUD. Majority of them were suffering from Schizophrenia 35% followed by Bipolar Mood Disorder (BMD) 25.8%, Major Depressive Disorder (MDD) 20%, Schizoaffective Disorder 9.9% and others 9.3%.

#### Pattern of Substance abused:

Taking of psychoactive substance/substances in the last one month (30 days) was considered as current substance abuse. Among them 61% used more than one type of substances. Respondents who gave history of single substance abuse most of them used benzodiazepines (49.2%), which was followed by alcohol (20.3%), cannabis (18.6%) and heroin (6.8%). Table 2.1 and 2.2 illustrates this result.

Mental Illness	Frequency (%)
Schizophrenia	53 (35%)
BMD	39 (26%)
MDD	30 (20%)
Schizoaffective disorder	15 (10%)
Others	14 (10%)

**Table 2.1** DSM IV diagnosis among the respondents (n=151)

Single Misused Substance	Frequency (%)
Benzodiazepines	29 (49.2%)
Alcohol	12 (20.3%)
Cannabis	11 (18%)
Heroin	4 (7%)
Others	3 (5.4%)

**Table 2.2** Pattern of substance abuse among the respondents on single substance (n=59)

**Socio demographic profile**

The study identified the socio demographic characteristics of the respondents including age, sex, religion, habitat, educational level, marital status and working status. It also included other relevant information about the family such as, type of family and monthly expenditure of family.

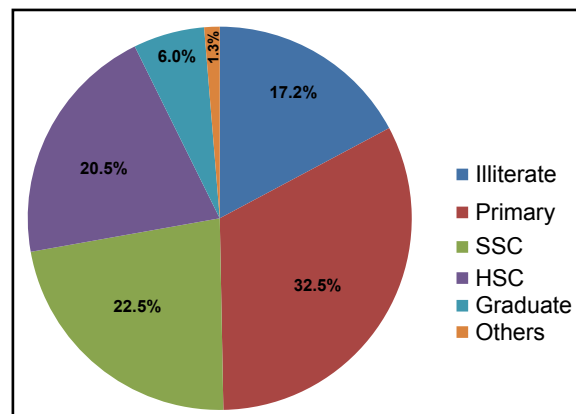
Majority of the respondents (49.7%) were in the 26-35 years age group, mean age was 28.35±7.26 years. Most were males (89.4%) while 10.6% were females. Total 94.7% of respondents were Muslims and the majorities (64.9%) were urban residents, 27.2% rural residents and 7.3% slum dwellers. 63.6% came from nuclear families while 33.8% from non-nuclear families. Most of them (32.5%) had only completed up to primary level of education and 17.2% were illiterate.

Majorities (31.1%) were unemployed at the time of interview, 23.2% were employed, and 21.2% students while 9.3% were never employed. Family income was mostly in the range of taka 10,000 to 20,000 per month. Monthly family income was Taka 10,754.0 (SD ± Taka 8.318.03). Details of socio-demographic characteristics are illustrated in table 3.1 and figure 1.1 & 1.2.

Characteristics	Frequency (%)
Age (In years)	
<18	6 (3.9)
18-25	43 (28.5)
>25-35	75 (49.7)
>35	27 (17.9)
Sex	
Male	135 (89.4)
Female	16 (10.6)
Religion	143 (94.7)
Islam	
Hindu	6 (3.9)
Christian	2 (1.3)
Resident Status	
Urban	98 (64.9)
Rural	41 (27.2)
Slum	11 (7.3)
Type of family	
Nuclear	96 (63.6)
Non-nuclear	51 (33.8)
Others	4 (2.6)
Monthly family in come (In Taka)	
<5000	25 (16.1)
5000-10000	52 (34.1)
10000-20000	57 (38)
>20000	16 (10.7)

**Table 3.1:** Distribution of the Socio- demographic characteristics (n=151)

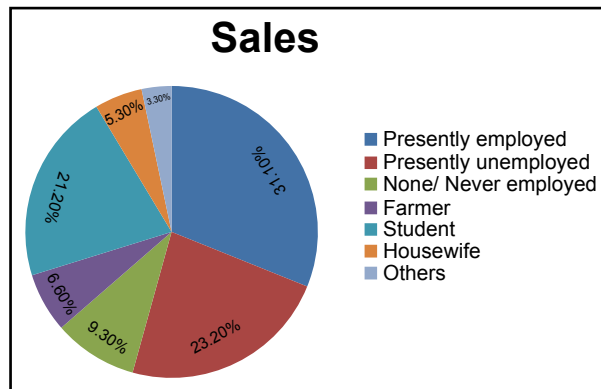
**Figure 1.1** Level of education received by the respondents (n=151)



Sales  
 Illiterate 17.20%  
 Primary 32.50%  
 SSC 22.50%  
 HSC 20.50%

Graduate 6.00%  
 Others 1.30%  
 To resize chart data range, drag lower right corner of range.

**Figure 1.2** Present working status of the respondents (n=151)



Sales  
 Presently employed 31.10%  
 Presently unemployed 23.20%  
 None/ Never employed 9.30%  
 Farmer 6.60%  
 Student 21.20%  
 Housewife 5.30%  
 Others 3.30%

**Discussion**

Non adherence to medication regimens is a serious problem. It has many serious effects on prognosis of the illness and overall effectiveness of health systems. Non adherence may signal that patient and physician differ over goals and priorities regarding the treatment and its schedule<sup>20</sup>. It was interesting to find that about half (57%) of the respondents in this study were non adherent to medication.

**Sociodemographic variable**

The study included highest number (49.7%) of patients from the age range of 26 to 35 years followed by (28.5%) from the range of 18-25 years with the mean age of 28.35±7.26 years. This trend of age does not differ much from the result of two previous studies done in our country<sup>21,22</sup>. Almost half of the respondents were in married group (47.7%), 7.3% were separated or divorced. In this study majority of the respondents were male (89.4%). Which indicate females are less addicted to substances. This finding is consistent with other similar previous studies of our country where male

respondents were majority (87.33%)<sup>21,23</sup> (96.1%)<sup>24</sup>. Though the majority still consist of the male, the rise in the female involvement is alarming. Educational status of this study population represented highest (32.5%) from the primary level. Thus the maximum (49.7%) were in the group of illiterate to primary level. Majorities (31.1%) were unemployed. The result is favored by the fact of deterioration of quality of life due to substance abuse. The result of the dwelling status reflected the urban predominance (64.9%) among the respondents. It is clearly explainable by the link of study place which is in the core of Dhaka city. Urbanization contributed by better availability of health facilities and greater awareness of people explains this correlation.

The result showed 94.7% cases with the religion of Islam. The finding is somehow usual in comparison with the Muslim/non-Muslim distribution of the population of our country which is 90% and 10% respectively, reported in population census (2001). We found only 4 (2.6%) respondents living in places other than family. 63.6% came from nuclear families while 33.8% from non-nuclear families. Even when nuclear family predominated members per family was found to be 5-6 (37.7%) which seems a bit higher. In the view of socio economic condition, family income was mostly in the range of taka 10,000 to 20,000 per month. Monthly family income was taka 10,754.0 (SD ± Taka 8.318.03). It may indicate that these middle class families prefer to seek help from the government hospital more than the affluent society. However these findings are more or less similar to previous studies conducted in our country among substance abusers<sup>23-27</sup>.

**Clinical variable**

All the respondents had dual diagnosis of psychiatric disorder and co-morbid SUD. Majority of them were suffering from Schizophrenia 35% followed by Bipolar Mood Disorder (BMD) 25.8%, Major Depressive Disorder (MDD) 20%, Schizoaffective Disorder 9.9% and others 9.3%. This finding is different from a study conducted in a psychiatric continuing day treatment program located in the Bronx, New York City. In that study majority (26%) had MDD and only 13% was schizophrenic<sup>28</sup>.

**Proportion of medication adherence**

This study found the proportion of medication adherence to be 43% as over half of the respondents (57%) admitted they had missed taking their medications on more than one occasion in the week -

prior to the interview. Study with patients having dual diagnosis of this type was not done previously. A study was conducted among 145 randomly selected patients attending outpatient department of National Institute of Mental Health, Dhaka in the year 2003. The overall noncompliance was found in 104 patients (71.72%) at that time<sup>19</sup>. It has been reported that the rates of completion of clinical trials for chronic medical conditions are only between 43% and 78%. It is likely that for those with psychiatric disorders, particularly with comorbid SUDs, this percentage may be even lower. According to a meta-analysis of medication compliance, the mean compliance rate for patients with physical disorders was 76%, whereas the ratio for patients taking antidepressants was 65% and 58% for antipsychotics. Unfortunately, little is known about the proportion of individuals in the general population who use mental health services and actually adhere to their treatment plan. A survey of psychiatrists showed that 40% of their patients with SUDs had treatment compliance problems. Both clinical and nonclinical factors appeared to be associated with treatment compliance problems. Among the clinical factors, patients with low treatment compliance were more likely to have personality disorders, lower global assessment of functioning scores and medication side effects than those without treatment compliance problems<sup>8</sup>.

Medication non-adherence rates are substantial among psychiatric patients. A review indicated that non-adherence ranges between 28% - 52% for major depressive disorder, 20%-50% for bipolar disorder, and 20% - 72% for schizophrenia, while one study estimated it at 57% for anxiety disorders. Substance abuse is usually associated with poorer medication adherence among psychiatric patients. Co-occurring psychiatric and substance use disorders are common; in the U.S. 8.9 million people have both past year mental illness and dependence on or abuse of illicit drugs or alcohol. Recognizing predictors of medication adherence among patients with dual psychiatric and substance use disorders is important because poor medication adherence is associated with relapse to substance abuse, re-hospitalization, homelessness and lower quality of life. Although there have been many studies of psychiatric medication adherence, there are few such studies focusing specifically on patients with co-occurring psychiatric and substance abuse disorders<sup>28</sup>. Estimates of prevalence are difficult to come by, not least because various studies have used different diagnostic criteria<sup>9</sup>. The 2002 Co-morbidity of

Substance Misuse and Mental Illness Collaborative study (COSMIC) concluded that: 75% of drug service clientele and 85% of alcohol service clientele had mental health problems. 44% of mental health service users used drugs or alcohol at hazardous or harmful levels in the previous year. A 2002 study in Bromley found that dual diagnosis was present in 20% of community mental health clients, 43% of psychiatric inpatients and 56% of people in secure services. There is a high prevalence of dual diagnosis among prison inmates<sup>29</sup>. The European Schizophrenia Cohort found that the lifetime rate for people with schizophrenia who were dependent on alcohol or other psychoactive substances was highest in the UK (35%) and considerably lower in Germany (21%) and France (19%)<sup>30</sup>.

A study of comorbid substance abuse in psychosis concluded that rates varied depending on service settings, geographical areas and ethnicity. Rates between 20% and 37% were reported in mental health settings, while figures in addiction settings were less clear (6-15%). They were especially high in inpatient and crisis team settings (38-50%) and forensic settings. Rates were highest in inner city areas<sup>31</sup>.

In a similar study conducted in a psychiatric continuing day treatment program located in the Bronx, New York City, modified Medication Adherence Rating Scale (MARS) was used. A mean of 2.6 non-adherence items were endorsed on the 8-item modified MARS. The most frequently endorsed items were: unnatural to be controlled by medication (47%); careless at times (44%) and sometimes stopped when felt better (44%). Forgetting to take medication was one of the less frequently endorsed items (31%)<sup>30</sup>. Some psychiatric comorbidity factors that can affect SUD treatment include the type of psychiatric disorder, severity of the comorbid psychiatric condition, early onset of illness and level of cognitive impairment<sup>8</sup>.

## Conclusion

This study explores the high proportion of medication non adherence in NIMH, Dhaka, Bangladesh among the patients having dual diagnosis. In a developing country like this efforts to identify risk factors for non adherence have beneficial social and economic consequences. With this motive research are required to discover predictors & effective methods of reducing medication non adherence. Bangladesh looks forward to a more organized psychiatric service. Our ultimate aim is to develop a healthy nation in all aspect including mental health.

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