ORIGINAL ARTICLE

Medication compliance behavior in psychiatric out-patients with psychoactive substance use comorbidity in a Nigerian tertiary hospital

CI Okpataku, HO Kwanashie[1], JI Ejiofor[1], VO Olisah

Department of Psychiatry, Ahmadu Bello University Teaching Hospital, [1]Department of Pharmacology and Therapeutics, Ahmadu Bello University, Zaria, Nigeria

Abstract

Background: Psychotropic medication adherence is a major challenge in psychiatric patients with comorbidity.
Objective: The objective was to determine medication adherence behavior among psychiatric out-patients with psychoactive substance use comorbidity in a Nigerian Tertiary Hospital.
Settings and Design: A cross-sectional study of a tertiary hospital in Northern Nigeria.
Methods: Adult patients who have been attending the out-patient clinic for at least 1 year were included. From the routine clinic, each consecutive fourth patient completed a socio-demographic and drug use questionnaire, a self-administered medication adherence scale, and a semi-structured proforma which sought reasons for poor adherence, information on supervision and who keeps patient medications at home; until a calculated sample of 208 was attained.
Statistical Analysis: Done by means of descriptive statistics using the Statistical Package for Social Sciences version 16. The level of significance was set at $P < 0.05$.
Results: Totally, 208 patients participated in the study. 61 (29.3%) of them were substance users, out of which 59% never reported missing their medications. No statistically significant relationship was found between substance use and medication adherence. A significant proportion of substance users were compliant with medication use when the drugs were in their possession. For substance users and nonusers, the major reason for poor drug adherence was the unavailability of the medications, while nonsubstance users were more likely to complain about being tired of the medications. No report of side effects in supervised patients.
Conclusion: The use of psychoactive substances in patients with other mental disorders influences their medication adherence behavior.

Key words: Adherence, hospital, Nigeria, out-patients, psychoactive, substance

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Introduction

The comorbidity of psychoactive substance use and other mental disorders is common and constitutes a major challenge to the management of both disorders in several parts of the world.[1] It has been found to be associated with increased psychiatric admission, poor treatment outcome in both psychiatric and substance use treatment population, increased cost, high utilization of services and disabilities.[2,3] It has also been reported that patients with this comorbidity have poor adherence to prescribed psychotropic medications used to treat the coexisting psychiatric disorder.[4]

Address for correspondence:
Dr. Christopher Izehinosen Okpataku,
Department of Psychiatry, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria.
E-mail: zehi29@yahoo.com

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As it is today, pharmacotherapy is the major treatment modality for psychiatric disorders worldwide and mentally ill patients are often placed on a list of psychotropic agents which they have to use for often prolonged period of time to remain "well." The long-term outcome of the illness depends partly on the patient's adherence with the prescribed medications.

In the United States, Owen *et al*. examined the effect of medication nonadherence among patients with schizophrenia who were receiving care in an out-patient care and found that substance use was strongly associated with self-reporting medication nonadherence. These patients also experienced significant symptom severity of schizophrenia.[4] Medication adherence is one of the most difficult challenges in the management of schizophrenia. Poor drug adherence is associated with an increase in the rate of relapse, rate and length of hospitalization, increased risk for hospitalization in the future, and poorer illness outcome for both disorders.[5-7]

Earlier studies had reported a prevalence of nonadherence to psychotropic medications ranging from 40.3% to 51.5% among psychiatric out-patients. However, these studies essentially considered adherence in the presence of a single psychiatric diagnosis.[8-11] A study among patients with schizophrenia in Nigeria found that the attitude toward antipsychotic medication was significantly affected by factors such as lack of insight into the illness, presence of global functioning, increased severity of illness, and side effects of medications.[12] In addition, feeling well, perceived spiritual causation, financial difficulty, and self-stigma have been reported as significant correlates of poor medication adherence among Nigerian patients with mental illnesses.[8,9] Both subjective response to medication and attitudes toward treatment are recognized to influence adherence.[13]

In Nigeria, psychotropic medication use is a major challenge for clinicians and it impacts significantly on the outcomes of management and medication supervision, that is, when patients use their medication strictly under the watchful eyes of another person (usually a parent, spouse, caregiver or a suitable older adult). This is a common practice in psychiatric setting aimed at enhancing adherence. Some studies done in Africa had documented that family involvement in psychiatric patients' care was significantly associated with maintaining hospital appointments but not medication adherence.[11,14] There is however, the relative dearth of information on medication adherence among psychiatric patients especially in those with comorbidity in Nigeria. This study documents psychotropic medication adherence in the psychiatric out-patients of a tertiary hospital and explores some extraneous factors that influence this behavior.

Methods

This was a cross-sectional study of all adults (18 years and above) regular attendees of the psychiatric out-patient clinic of the Ahmadu Bello University Teaching Hospital Zaria. The hospital is a major health facility in Northern Nigeria, receiving referral cases from all specialist units of the hospital, neighboring peripheral hospitals, and other parts of the country. An ethical clearance was obtained for the study from the Health Research Ethics Committee of the Hospital. In addition, informed consents were sought from the patients before interview.

From the routine clinic follow-up, each consecutive 4th patient eligible for the study was interviewed after they had seen their physician until the sample size of 208 was attained.

The sample size required was calculated using the formula for calculating sample size in cross-sectional studies when the population is < 10,000.[15]

$n_f = n/1 + (n/N)$, where:

n_f = Final sample size.
n = The desired sample size when the population is more than 10,000.
N = 400 (the estimate of the study population), which was given by the medical record office as the number of regular attendees at the general out-patient clinic).

$n = Z^2\,pq/d^2$, where:

Z = The standard normal deviate, set at 1.96 to the 95% confidence level.
p = the proportion in the target population estimated to have a particular characteristic, in this case 0.48. This was based on the prevalence for poor adherence in a similar study.[8]
q = 1 − p
d = Degree of precision desired, set at 0.05.

An estimated minimum sample of 195 was, therefore, obtained. However, 208 patients were recruited to give better power.

Patients with psychotic symptoms, including hallucinations, delusions and thought disorders, cognitive problems including at least short-term memory deficits or disorientation that were judged clinically severe enough to interfere with responses to the questionnaire, or who were too ill to get into meaningful clinical engagement were excluded based on the current clinical assessment of the psychiatrist whom the patient had seen at the clinic. The selected respondents completed a socio-demographic questionnaire which sought

information on age, sex, marital status, religion, occupation and level of education, a drug use questionnaire which sought information on the type and onset of psychoactive substance use, a self-administered medication adherence scale requesting the following items: In the past 1 month; "I never missed my medications, I missed a few times, I took at least half, I took less than half, I stopped" and a semi-structured proforma which sought reasons for poor adherence. Information on who keeps patient medications and supervision were also requested. All questionnaires had been pilot-tested among 10 randomly selected psychiatric patients who had attended the clinic, but were excluded from the main study. After the test, the contents of the questionnaires were found satisfactory before the main study began. The data obtained from these instruments were analyzed by means of descriptive statistics using the Statistical Package for Social Sciences, version 16. Chi-square test (χ^2) was used to test for the differences between categorical variables. Where conditions for the Chi-square test were not met, the Fisher's exact test was applied. The level of significance was set at $P < 0.05$. Medication supervision here was taken as when patients used their medication strictly under the watchful eyes of another person (usually a parent, spouse, caregiver or a suitable older adult). These criteria were applied both for those who lived with others or alone (as some patients who lived alone were using their medication under the supervision of a neighbor, colleague at work or friend). In this study, this must have been the practice for most (at least half) of the times when medications were used. Adherence was taken as "GOOD" when a patient never missed or missed only few doses, while "POOR" adherence refers to any of the other categories above.

Results

The total of 208 respondents were interviewed, out of which 110 were males (52.9%) and 98 of them females (47.1%). The mean age of the respondents was 36.72 ± 12.69. Sixty-one (29.3%) of the patients were using psychoactive substances singly or in combination while 147 (70.7%) of them were nonusers of substances. The respondents undergoing treatment for schizophrenia were 127 (61.1%) forming the largest group of the respondents while 11 (5.3%) of them had other forms of acute psychotic disorders. Respondents with bipolar affective disorders were 20 (9.6%), 23 (11.9%) of them had depressive disorders, 11 (5.3%) of them had anxiety disorders, while 9 (4.3%) of them had one or more of the other neurotic disorders.

The substances being used were as shown above, with alcohol and cannabis being the most common [Table 1]. Substances were mostly used in multiple combinations, and the lifetime prevalence of the use of at least one substance was 29.3%, while for the use of multiple substances was 17.3%.

Patients who were attending the out-patient psychiatric clinic were on prescribed medications usually for the nonsubstance use disorder. The prescriptions were written by the physicians they consulted for the day. Of the 61 psychoactive substance users, 59% reported never missing their medications in the last 6 months prior to the interview.

About 11.5% of the patients had discontinued their medications. For those patients who had used at least half of their total doses, 81.9% of them were substance users while 91.2% of them were nonsubstance users [Table 2].

Although there was higher proportion of substance users with poor medication adherence, no statistically significant relationship was found between substance use and medication adherence [Table 3].

A statistically significant proportion of the respondents who were using psychoactive substance were compliant with use of their prescribed medications when the medications were in their possession, that is, when the medication remains in the custody of the patient [Table 4]. However, no statistically significant relationship was found between medication supervision and adherence behavior [Table 4].

The reasons patients gave for their poor medication adherence were as shown below. For users of psychoactive substance whose medication use was unsupervised,

Table 1: Substances being used by the patients

Psychoactive substance	Frequency	Percentage
Alcohol	32	15.4
Cannabis	27	13.0
Opioids	4	1.9
Tobacco	14	6.7
Solvents	9	4.3

Table 2: Level of medication compliance in the patients

Medication compliance	Substance users (%)	Nonsubstance users (%)
Never missed	59	56.5
Missed a few	13.1	26.5
Missed several but took at least 50%	9.8	8.2
Took <50%	6.6	2
Stopped medications	11.5	6.8

Table 3: Medication compliance in substance and nonsubstance users

Medication compliance	Substance users	Nonsubstance users	Total
Good	50	134	184
Poor	11	13	24
Total	61	147	208

χ^2=3.566; df=1; P=0.059

Table 4: Medication compliance in supervision and drug possession status of the substance users

	Medication compliance		Statistics
	Good	Poor	
Supervised	10	3	$P=0.43$
Unsupervised	40	8	
In patients's possession	41	3	$P<0.001$
In caregiver's possession	9	8	

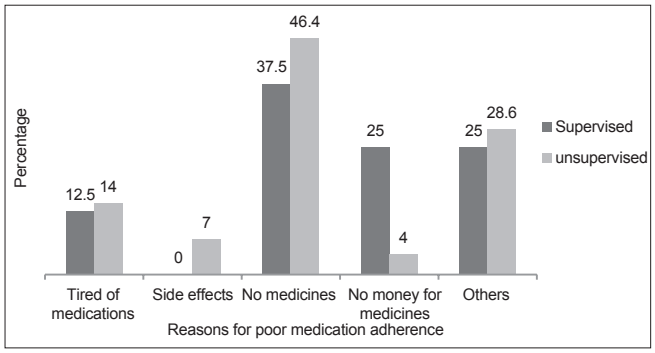

Figure 1: Reasons for medication nonadherence in supervised and unsupervised psychoactive substance users

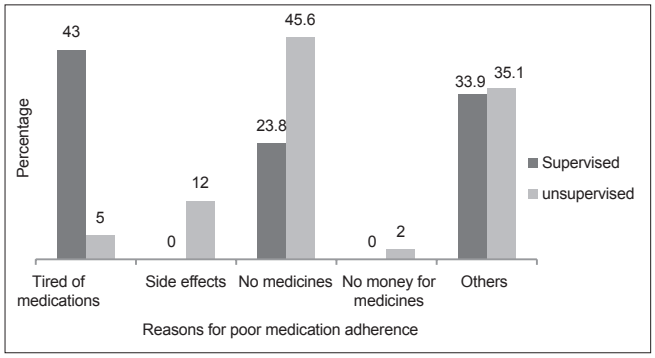

Figure 2: Reasons for medication nonadherence in supervised and unsupervised nonpsychoactive substance users

46.4% which is the largest proportion gave the reason for their partial adherence to be the unavailability of their medications at the time they were expected to use them.

About 37.5% of respondents whose medication use was supervised also largely reported unavailability of the drug as the reason for partial drug adherence. Side effect was not recorded as a reason, however. Those noted under "other" reasons included pregnancy, forgetfulness, and missing doses because they had not eaten at the expected time of drug use [Figure 1].

Respondents who were not using psychoactive substances and have been unsupervised during medication use reported unavailability of their prescribed drugs with 45.6% of the respondents indicating this reason. Supervised medication users had 42.9% of them who complained about being tired of the drugs. No report for side effects and high cost. 23.8% complained about unavailability of drugs while 33.9% reported other reasons [Figure 2].

Discussion

Medication adherence is seen as the extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen.[16] Most of the patients in this study reported never missing a dose of their medication at least during the period under examination. It is necessary to review this result in the context of the clinical situation under which this study was conducted. Several factors are known to affect or influence a patients' adherence behavior, ranging from the insight a patient has or does not have about his or her mental illness.[4] Empirical evidence revealed that it was routine practice for professional psychiatric care providers of the respondents to give insight-oriented counseling to them and their relatives who are seen in the out-patient clinic of the hospital. Insight was also an important factor to consider in a patient who is to be discharged from admission in hospital prior to commencement of the out-patient clinic. This practice may have contributed to their improved treatment adherence as reported by the respondents in this study. It could have also accounted for why, despite a high proportion of patients who were using substances with less adherence to medications, a statistically significant relationship between substance use and medication adherence was not found. Perhaps a larger sample would have shown this effect better and should be considered in future studies. However, several studies have shown that for patients with mental disorders, substance use negatively affect their adherence to prescribed medications.[5,17-19] Other relationships between substance use and mental illnesses have also been described. For a mental disorder such as schizophrenia, poor adherence was found to be significantly associated with the use of substance.[18] On the other hand, in bipolar affective disorder comorbid with substance use, patients were not only poorly compliant to the drugs but were more likely to take more medications than prescribed.[20] It was not the focus of the current study, however to evaluate the influence of the various psychiatric diagnosis and adherence with medications.

In hospital psychiatric practice in Nigeria, it is a common practice to have doctors, pharmacists, and nurses insist that the patients' caregivers such as their mothers keep medications and have the patient take them under direct supervision with the aim of improving adherence. Medication supervision had been reported to be associated with better adherence in patients with psychotic disorders.[21] However, this study was done in residential treatment setting where patients may have a sense of obligation to use medications as against the current study among outpatients.

The current study shows a significant association between respondents who kept their medications and adherence behavior, as a significant proportion of respondents were found to comply better when the medications were in their possession than when in the care of a relative. Medication supervision however did not have any significant relationship with adherence. This ordinarily means that it may not matter so much whether a patient's medication use is supervised or not to achieve adequate adherence. It is partly understandable from the perspective of the reasons the respondents gave for defaulting from medication use. A major proportion of respondents who were supervised reported that medications were not available to them at the time of expected use. This response may suggest that patients or caregivers do not purchase or make medications available for use, but could also imply an attribution of blame to the relatives by the patient who perceives supervision as an infringement on their boundaries. However, a closer look at those whose medication use was unsupervised also shows that they reported "no drugs available" at the time of expected use. It is very relevant, therefore, for the psychiatric team providing care to reappraise the value of insight counseling, medication possession, and supervision as it relates to adherence behavior.

In a study to determine the reasons for nonadherence, patients gave reasons such as the nonaffordability of the medications, physical side effects, lack of information by doctors, and the unfriendly attitude of doctors as the most common reason for nonadherence.[22] Similarly, another study among outpatients with schizophrenia found that lesser education status, rural area of stay, adjustment difficulty with family members, higher positive symptoms severity, poor insight, and previous nonadherence were significantly associated with poor adherence.[23] From most studies, reasons given by patients for poor adherence to medications are multiple and diverse, including feeling well, perceived spiritual causation, financial difficulty and self-stigma,[8,9] side effect problems like dyskinesia and sedation[12,22-24] poor insight,[25,26] nonaffordability of drugs,[22,23] and inadequate education by physicians.[22] The reasons appear to vary with the primary psychiatric diagnosis of the patients, outpatients versus inpatient settings and comorbid states. Of crucial importance too is the influence of socio-economic factors as most studies from communities or countries with lower economic strength of the populace may report issues of affordability while in more developed economies other reasons gain prominence. Most of these reports were based on patients with a single diagnosis like schizophrenia and from the "developed world" as against the current study done among patients with comorbid psychoactive substance use in Nigeria. They, however, give valued representation of the medication use behavior in the presence of a psychiatric disorder.

It was quite informative that in the current study, patients whose medication use was supervised did not report side effects as a reason for poor adherence. As noted above, side effects of medication are often reported as a major reason for medication nonadherence. This appears to be a default reason as most antipsychotic used by psychiatric patients (especially the old generation antipsychotics) are associated with prominent side effects. Among outpatients with schizophrenia, a study that evaluated some profiles of the old and new generation antipsychotic reported that extrapyramidal symptoms which are the most troublesome side effects of the psychotropics did not predict drug attitude.[24] Unexpectedly in the current study also, compared to substance users, most patients who were not using psychoactive substances indicated that they were tired of the medications while substance users reported high cost of medications as major reasons for poor medication adherence.

With this seemingly unpredictable pattern of reasons given, further research may be necessary here in this community of patients to explore adherence as it relates to the presence of substance use, supervision, and the reasons patients claim as the basis for good or poor adherence. This will, hopefully, guide formal psychiatric caregivers on appropriate drug adherence practice as it relates to patients with psychoactive substance use and other psychiatric diagnosis to improve their patients' medication use.

Conclusion

From this study, a high proportion of the psychiatric out-patients with substance comorbidity were less compliant with their medication use. However, no statistically significant relationship was found between substance use and medication adherence. Patients with comorbidity may have better adherence when medications are made available and kept in their possession, while supervision of drug use may not have any significant impact on adherence. Based on the reasons patients with substance use or no substance use, supervised or nonsupervised have given for poor adherence, strategies to improve adherence could be structured to specifically direct interventions to patient's groups on this basis. Understanding the extraneous factors that influence or affect medication adherence behavior in psychiatric patients with comorbidity is crucial for the adoption of appropriate measures to ensure adherence. The patterns of medication use behavior in this study require further investigation using larger sample sizes and standardized instruments which could identify adherence and reasons for adherence better, but minimize bias.

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