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## Prescribing habits for psychiatric in-patient admissions in a Nigerian psychiatric hospital

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### Summary

The study evaluated the prescribing habits of psychotropic drugs in a psychiatric set-up. It revealed that neuroleptics were the most frequently prescribed psychotropic drugs, as they were given to 88% of the 170 patients placed on admission during the study period. They also formed a major part of the treatment of patients with depressive illness, where their combination with antidepressant drugs were more frequently prescribed than antidepressants alone. Depot neuroleptics were not used only as maintenance drugs or for patients with poor oral compliance, but prescribed as stat doses given once daily, in 16% of the patients. Antiparkinsonian drugs were frequently prescribed and were not necessarily commenced after the development of extrapyramidal side effects, as one-third of the patients on them had the drugs prescribed on the first day of treatment. A combination of two or more drugs, administered frequently per day was common. Prescribing instructions for pro re nate (p.r.n.) drugs were inadequate. The study highlights areas of improvement in prescribing habit over earlier studies and further reveals the ones that need to be improved especially in an economy that can least afford wastage.

### Résumé

Cette étude est une évaluation des habitudes consistant à prescrire des médicaments psychotropiques dans un hôpital psychiatrique. Elle a révélé que c'était les drogues neuroleptiques qui étaient fréquemment prescrites comme médicaments psychotropiques et elles étaient données à 88% des 170 malades hospitalisés pendant la période d'étude.

Elles constituent la majeure partie du traitement donné aux malades souffrant de dépression dans les

cas où sa combinaison avec les médicaments antidépresseurs est plus fréquemment prescrite que les drogues antidépresseurs seules.

Les dépôts neuroleptiques n'étaient pas utilisés seulement pour un traitement régulier ni pour les malades qui toléraient mal les comprimés à avaler, mais ils étaient prescrits comme doses uniques à 16% des malades. Les médicaments antiparkinsoniens étaient souvent prescrits. Ils n'étaient nécessairement pas utilisés après le développement de réactions extrapyramidaires; au fait un tiers des malades en est traité de le premier jour des soins.

La combinaison de deux ou de plusieurs médicaments donnés en doses quotidiennes était très fréquente. Donner des indications pour des médicaments pro-re-nés (p.r.n.) n'était pas adéquat.

Cette étude a permis de constater une amélioration dans la pratique de prescriptions de médicaments et elle a, en plus, révélé les endroits qui ont besoin d'être améliorés surtout pour une politique économique ou aucune perte n'est tolérée.

### Introduction

There has been a growing concern about prescribing habits to psychiatric patients either as in- or out-patients in psychiatric hospitals or in general practice. Many studies have been published from different countries about the prescribing habits in the various psychiatric hospitals or general practice clinics. Tyrer[1], examined the drug prescribing habits for psychiatric patients in general practice in Britain, while Michel & Kolakowska[2]; published the first British study on prescribing habits in two psychiatric hospitals in Oxford. Other studies have included those by Sheppard *et al.* [3], from U.S.A.; Hemminki[4], from Finland and Yocelson - Supertine *et al.* [5] from Israel. In Nigeria, different

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studies have evaluated psychotropic prescribing patterns and the frequency of such prescriptions in psychiatric and general hospital settings[6,7,8,9,10]. Nearly all of these studies and others, have identified and highlighted concurrent use of more than one psychotropic drug, that is, polypharmacy[11,12,13], excessive and prolonged use of antiparkinsonian drugs[4,8,14], illogical prescribing, for example increased frequency of drug administration[2,12,15] and inadequate or excessive dosage of prescribed drugs[4,6,7,9].

The study of Odejide[7], on in-patient services in the same hospital where this work was carried out, examined prescription pattern for the major tranquilizing drugs. This was carried out over a decade ago when the number of psychiatrists and resident trainees in the hospital were few. Furthermore, the prescription variables looked at were limited. Famuyiwa[8], in his study on the other hand, examined different psychotropic drugs including adjunctive ones, in three psychiatric units in Nigeria but then these were in relation to prescription for schizophrenia and depressive disorders only.

The present survey of psychotropic drug prescribing is aimed therefore, at examining the prescribing pattern for the different psychiatric disorders, rather than for schizophrenia and depressions as in the study by Famuyiwa[8]. It is also to examine the types of all the drugs prescribed, as against only the major tranquilizers that were assessed in the study by Odejide[7]. Furthermore, it hopes to delineate any relationship between the prescribed psychotropic drugs with the clinical diagnosis.

### Materials and methods

The study was carried out at the Neuropsychiatric Hospital, Aro, Abeokuta, Nigeria. The hospital is a teaching institution for undergraduate and post-graduate training in psychiatry and it serves a large catchment area of the Nigerian population. It has a bed capacity for about 500 in-patients and a high bed-occupancy rate at any given time. It is made up of two units, the main hospital unit located at Aro, consisting of 5 wards for acutely disturbed patients and an extension unit at Lantoro housing 7 wards for the chronic, long-stay patients with frequent spill-over from the acute admission wards. The study was carried out on all admissions to the two units of

the hospital during the months of November and December, 1989.

Information was obtained by the author, from the case notes of all the patients admitted during the study period after being discharged from the wards. The drugs considered for study were those prescribed in the wards and which remained constant for a period of at least 2 weeks. Furthermore, the sedatives administered to the patients on admission and continued as *pro re nate* (p.r.n.) were also recorded. These types of drugs were not considered as the primary prescribed drug of treatment for the patient but were assessed to have an overall picture of the other prescribing variables.

The psychiatric diagnosis used were as contained in the case notes. The diagnosis were adhered to because the author believes that prescribing habit is partly dependent on the psychiatric diagnosis given and as such re-categorization by the author might obscure the possible reasoning behind a particular prescribing pattern. This reasoning accounts for the inclusion of more diagnostic categories as opposed to those used by earlier workers[2,12,13]. Consequently, schizo-affective disorder was left separate and not classified as schizophrenia like Michiel & Kolakowska[2]. Paranoid psychosis formed another separate group, drug dependence with psychosis was left separate and not re-classified under organic psychosis. Furthermore, patients with drug dependence were included, since all patients who came on admission during the study period formed the subject group.

Patients with neurotic disorder, personality disorder or mental retardation did not feature in this study, since only in-patient population were studied, as most of the patients with these diagnostic categories tended to be managed on an out-patient basis. Psychotropic drugs were defined as in the study by Morgan & Gopalaswamy[12], using the British National Formulary definition of psychotropic drugs as "Drugs acting on the Central Nervous System." All drugs coming within this category were included with slight modifications. Lithium drug treatment was also assessed. The characteristics of the patients evaluated included age, sex, psychiatric diagnosis and duration of illness. The drug information obtained from the case notes included the names of the drugs prescribed, their combination, the frequency of administration, and the total number prescribed. Others were the types, frequency of sedatives given as p.r.n. medication and

the commencement of antiparkinsonian and depot neuroleptic drugs.

The author was the only one aware of the study during the period and as such prescribing habits of the doctors could not have been influenced by a pre-knowledge.

## Results

### Patient population

The total number of patients admitted during the study period was 170, 94 (55%) were males while 76 (45%) were females. The patients aged between 15-39 years were 78%, while 17% were aged 40-59 years and 5% were 60 years and above. The most frequent diagnosis was schizophrenia (42%), followed by drug dependence with psychosis 14%, depression 12%, paranoid psychosis 9% and mania 8%. Other diagnostic categories obtained included schizo-affective disorder (2%), organic disorders (6%), drug dependence (4%) and others (3%). The

patients contained in the diagnostic group "others" included 4 patients with a diagnosis of non-specific psychosis, one with grief reaction and another with acute situational crisis.

### Prescription for psychotropic drugs and their combinations

Table 1 shows the various psychotropic drugs prescribed. Neuroleptics were the most frequently prescribed psychotropic drugs. They were prescribed alone, or in combinations as oral and depot preparations. They were also prescribed in combination with antidepressants, antiparkinsonian, hypnotics and lithium drugs. Antiparkinsonian drugs were prescribed in three-quarters of the patients on neuroleptics. No drugs were prescribed for 4% of the patients, these were 3 patients with a diagnosis of drug dependence, 2 with drug dependence with transient psychosis and 1 with acute situational crisis.

Table 1: Prescriptions for psychotropic drugs and their combinations

	Patients (n = 170)		Percentage of all on neuroleptics (n = 149 = 100%)
	n	%	
Neuroleptics Total	149	(88)	
oral only	100	(59)	67
Depot only	1	(1)	1
Oral + depot	48	(28)	32
With antiparkinsonian drugs	111	(65)	75
With antidepressants	16	(9)	11
With minor tranquilizers	2	(1)	1
With hypnotics	2	(1)	15
With lithium	2	(1)	1
			Percentage of all on antidepressants (n = 25 = 100%)
Antidepressants total	25	(15)	
Only	9	(5)	36.00
With Neuroleptics	16	(9)	64.00
With Minor tranquilizers	1	(1)	4.0
With hypnotics	1	(1)	4.0
Minor tranquilizers*	2	(1)	
Hypnotics*	2	(1)	
No drugs*	6	(4)	

\* No other drugs.

Table 2: Prescriptions for neuroleptics, antidepressants and antiparkinsonian drugs by diagnosis

Diagnosis	Neuroleptics oral only		Neuroleptics depot only		Neuroleptics oral + depot		Neuroleptics + antidepressants		Antidepressants only		Antiparkinsonian drugs		
	N	n	%	n	%	n	%	n	%	n	%	n	%
Schizophrenia	71	70	(99)	—	—	41	(58)	1	(1)	—	—	54	(76)
Affective disorder:													
Mania	14	14	(100)	—	—	2	(14)	—	—	—	—	12	(86)
Depression	21	—	—	—	—	1	(5)	13	(62)	8	(38)	9	(43)
Schizo-affective disorder	3	1	(33)	1	(33)	1	(33)	—	—	—	—	1	(33)
Organic disorder	10	9	(90)	—	—	—	—	—	—	—	—	7	(70)
Drug addiction	7	—	—	—	—	—	—	—	—	—	—	—	—
Drug addiction with psychosis	23	20	(87)	—	—	8	(35)	—	—	—	—	13	(57)
Paranoid psychosis	15	15	(100)	—	—	6	(40)	—	—	—	—	12	(80)
Others	6	4	(67)	—	—	3	(50)	—	—	1	(17)	3	(50)

#### Prescription for neuroleptics, antidepressants & antiparkinsonian drugs by diagnosis

Nearly all of the patients with schizophrenia, and all those with mania and paranoid psychosis were prescribed neuroleptics (Table 2). Depot neuroleptics in combination with oral neuroleptics were more frequently prescribed for patients with schizophrenia. A combination of neuroleptics with antidepressants was more often prescribed than antidepressant alone for the treatment of patients with depressive illness. Over three-quarters of the patients with a diagnosis of schizophrenia, mania and paranoid psychosis were prescribed antiparkinsonian drugs. Most patients with drug dependence had no drugs prescribed except occasional benzodiazepines for withdrawal symptoms which were usually withdrawn within a few days. The prescribed treatment for these groups of patients were counselling, education, psychotherapy, religious therapy and rehabilitation. However, some patients with drug dependence with psychosis were placed on neuroleptics.

#### Choice of psychotropic drugs, order of popularity and dose range

The most commonly prescribed neuroleptic was chlorpromazine. It was prescribed in a dose range of

25-800mg per day in 85% of the patients, while 30% had haloperidol, in a dose range of 3-800mg per day. Depot preparation was prescribed for 29% of the patients of which 17% had fluphenazine decanoate, and the highest dose given was 100mg every 4 weeks. Flupenthixol decanoate, in a dose range of 20-40 mg every 4 weeks was prescribed in 11% of the patients. The most widely prescribed antidepressants was amitriptyline (92%) and these were mostly given as nocte drugs. The only minor tranquilizer prescribed, was diazepam. This was used as i.m./i.v. sedatives in 25% of the patients at the time of admission, or continued as p.r.n. drugs for another 1-3 days afterwards.

#### Number of psychotropic drugs per patient by diagnosis

Table 3 shows that over half of the patients with a diagnosis of schizophrenia, organic disorder, paranoid psychosis and others were on 3 or more drugs. Over three-quarters of the patients with a diagnosis of mania and all those with schizo-affective disorder were prescribed 2 or more drugs. Also, over half of the patients with drug dependence with psychosis had more than 2 drugs prescribed. With all patients, three-quarters were on two or more psychotropic drugs.

Table 3: Number of psychotropic drugs per patients by diagnosis

Diagnosis	N	Number of drugs per patient									
		0		1		2		3		4	
		n	%	n	%	n	%	n	%	n	%
Schizophrenia	71	—	—	13	(18)	19	(27)	20	(28)	19	(27)
Mania	14	—	—	1	(7)	6	(43)	6	(43)	1	(7)
Depression	21	—	—	7	(33)	8	(38)	5	(24)	1	(5)
Schizo-affective	3	—	—	—	—	2	(67)	1	(33)	—	—
Organic disorder	10	—	—	1	(10)	—	—	6	(60)	3	(30)
Drug addiction	7	3	(43)	1	(14)	—	—	3	(43)	—	—
Drug addiction + psychosis	23	2	(9)	8	(35)	9	(39)	4	(17)	—	—
Paranoid psychosis	15	—	—	2	(13)	4	(27)	4	(27)	5	(33)
Others	6	—	—	2	(33)	—	—	3	(50)	1	(17)

#### Frequency of drug administration

Well over half (69%) of the patients on neuroleptics had the prescription for three or more doses per day, whereas, all of the patients on antidepressants were prescribed a single dose of the drugs per day and this was a nocte drug, in over four-fifth of the cases. Antiparkinsonian drugs were prescribed in two or more doses per day in over two-thirds of the 111 patients placed on them.

#### Length of illness and depot administration

The length of psychiatric illness for the patients prescribed depot neuroleptics varied. Of the 63 patients placed on them, 15 (24%) had the illness for less than 3 months, 3 (5%) had the illness for more than 3 months but less than 2 years, while 45 (71%) had the illness for a period of 2 years and above. Depot neuroleptics were prescribed as stat doses given once only in 10 (16%) of the patients and this was on the first day of admission, the psychiatric illness was of less than 3 months in 6 of these patients.

#### Other prescribing variables

Intramuscular sedatives were prescribed in 104 (61%) of the patients. These were usually given on the day of admission and for the first few days afterwards. Neuroleptics were administered as the sedative in 78 (75%) of these patients while 26 (25%) had other psychotropic sedative drugs. Of these 25 patients, 19 had diazepam as the sedative and 7 had promethazine. The drugs were prescribed as stat doses in 15% of the patients and p.r.n. for the next 1-3 days in the remaining 75%. Neuroleptics were therefore the most frequently prescribed sedatives for disturbed, agitated patients; chlorpromazine being the most favoured in 97% of the cases in a dose range of 100-200mg stat/p.r.n.

The p.r.n. prescriptions were usually not sufficiently detailed about the frequency of administration of the dose prescribed and the length of time of its use. Prescriptions were written as p.r.n. in 41 (39%) of the 104 patients, 4 (4%) had detailed prescriptions instructions about the frequency and length of use, for example, chlorpromazine 100mg stat, 100mg 8 hourly x 24 hours while the remaining 59 (57%) had varying degrees of insufficient prescribing information. Of the 75% of patients

prescribed antiparkinsonian drugs, 34% had them prescribed on the first day of treatment.

### Discussion

Neuroleptics were the most frequently prescribed psychotropic drugs in this study which is consistent with the findings of Odejide[7], Famuyiwa[8] and other workers[11,13], and it expresses the most common form of treatment for the diagnostic groups studied.

For depressive disorders generally, the frequency of prescribing antidepressants alone to prescribing a combination of antidepressants with neuroleptics was small but thrice the 12% obtained in the study by Famuyiwa[8]. This could possibly be a reflection of differences in the prescribing habits in the different centres or to a change in the general prescribing pattern over time. However, the frequency of prescribing neuroleptics with antidepressants rather than antidepressants alone, is twice that of the Oxford and Birmingham studies[2,13] and higher than that by Famuyiwa[8]. Patients with psychotic depression might account for this combination treatment of antidepressants being prescribed for the depression and antipsychotics for the psychotic features. This prescribing habit has been supported by some workers but not others[2,13,16,17].

The fact that over one-third of the patients had antiparkinsonian drugs prescribed on the first day of treatment, indicated that these drugs, were prescribed concurrently with the neuroleptics, without the patients having developed any extrapyramidal side effects. The reason sometimes adduced for the prophylactic use of antiparkinsonian drugs, is the possible development of extrapyramidal side effects at home, in some patients treated on out-patient basis. This reasoning is still not tenable and was not indicated in this study or in some of the others where in-patient admissions were studied[2,5,7,8]. The adverse effects of these drugs cannot be overemphasized. They are known to have addictive properties, impair cognitive functioning and their anticholinergic properties can cause visual and sexual disturbances apart from the confusion in the elderly, amongst others[18].

Despite the fact that adequate doses of one or two psychotropic drugs should be sufficient to treat acutely disturbed psychotic patients, polypharmacy was still high. Polypharmacy has been a worrisome finding in most of the prescribing studies, it makes

drug compliance more difficult, it is more expensive, leads to more side effects and has not been shown to be therapeutically advantageous[4,19]. Polypharmacy therefore, needs to be avoided by every prescribing clinician especially in a developing country where cost consideration should be of utmost importance [7,8,12,15].

The present study also highlights the frequent administration of psychotropic drugs. This prescribing habit is more time-consuming for the nurses and reduces drug compliance by the patients. It is noteworthy however, that antidepressants are mainly administered once daily and usually at night. This is quite a departure from the thrice daily prescription obtained in 78% of the patients on antidepressants in the study by Famuyiwa[8]. Most neuroleptics and antidepressants have long half-life, with many active metabolites and need only be administered once or at most twice daily.

The pattern of prescribing depot neuroleptics as stat doses, given only on the first day of admission as a "once and for all cure", negates the constant medical monitoring these patients require. This prescribing habit furthermore, nullifies the use of depot neuroleptics as maintenance drugs to be given to chronic patients or to patients with poor oral drug compliance. Pro re nate (p.r.n.) as observed in this study did not complain sufficient prescribing instructions. This places a lot of clinical responsibility on the nursing staff in determining the frequency and length of use of the drugs, with consequent arbitrariness in the administration of such prescriptions.

It is noteworthy, that the practices of prescribing depot as stat doses, antiparkinsonian drugs concurrently with neuroleptics and inadequate information on p.r.n. drugs, were more observed during the first day of admission, when the resident trainees effect such admissions. While this may reflect the state of their training, it becomes incumbent on the consultants to monitor and correct the anomalies of such practices. Such monitoring could be achieved through continuous hospital drug auditing. The study showed more positive changes over what was obtained a decade ago by Odejide[7] and in the study by Famuyiwa[8]. It showed a reduction in the prescription of hypnotics, a reduction in the prolonged use of benzodiazepines, and a once daily administration of antidepressants. It however, showed not too significant changes in some areas of inappropriate prescribing habits. This calls

for a more concerted effort by the psychiatrists and trainees to improve on these areas.

It is hoped, therefore, that this type of study, would encourage further research in enlisting other variables mediating drug prescription in developing countries. This would help to map out the best strategies for good prescribing habits and drug auditing in an economy that can least afford wastage.

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