

Psychotropic drugs prescriptions in Al-Qassim Region, Saudi Arabia

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وصفات الأدوية النفسية التآثير في منطقة القصيم، بالمملكة العربية السعودية

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خلاصة: تمت دراسة وصفات الأدوية النفسية التآثير التي حررت للمرضى المترددین على العيادات الخارجية النفسية. فتم تقييم 18 265 وصفة طبية اختيرت بطريقة نظامية عشوائية من بين 52 168 وصفة حررت في عام 1996. وقد وجد بينها بعض الوصفات الطبية الناقصة. وشملت البيانات الناقصة مدة المعالجة (18.75%) والجنس (9.25%) والعمر (8.75%) والتشخيص (7.50%). وتبين أن الأدوية التي وصفت أكثر من غيرها هي مضادات الذهان (33.1%) ومضادات الاكتئاب (23.2%) ومضادات الفعل الكولينجي (22.0%) ومضادات الاختلاج (12.9%). وكان تعدد المستحضرات الصيدلانية من أكثر الممارسات أتباعاً (85%). أما أكثر التشخيصات التي تم التوصل إليها فقد كانت اضطرابات المزاج (23.1%) والقلق (17.7%) والغصام (16.2%). ومن المقترح تنظيم برامج للتعليم الطبي ومراقبة الجودة من أجل تحسين وصفات الأدوية النفسية التآثير وتقويم ممارسة وصف المستحضرات العلاجية المتعددة.

ABSTRACT Psychotropic drugs prescriptions for patients attending psychiatric outpatient clinics were studied. Of the 52 168 prescriptions written in 1996, 18 265 were systematically, randomly selected and evaluated. Incomplete prescriptions were found; the data missing included duration of treatment (18.75%), sex (9.25%), age (8.75%) and diagnosis (7.50%). Antipsychotics (33.1%), antidepressants (23.2%), anticholinergics (22.0%) and anticonvulsants (12.9%) were the most frequently prescribed drugs. Polypharmacy (85%) was the predominant mode of practice. The most common diagnoses were mood (23.1%), anxiety (17.7%) and schizophrenic (16.2%) disorders. Medical education and quality monitoring programmes are suggested to improve the quality of psychotropic prescriptions and modify multiple pharmacotherapy practice.

Les prescriptions de psychotropes dans la région de Al-Qassim, Arabie saoudite

RESUME On a procédé à une étude des prescriptions de psychotropes pour les patients fréquentant les services de consultations psychiatriques externes. Parmi les 52 168 prescriptions établies en 1996, une sélection aléatoire a été opérée de manière systématique par laquelle on en a retenu 18 265 qui ont fait l'objet d'une évaluation. Des prescriptions incomplètes ont été trouvées: les données manquantes comprenaient la durée du traitement (18,75%), le sexe (9,25%), l'âge (8,75%) et le diagnostic (7,50%). Les médicaments les plus fréquemment prescrits étaient les antipsychotiques (33,1%), les antidépresseurs (23,2%), les anticholinergiques (22,0%) et les anticonvulsifs (12,9%). La polypharmacie (85%) était le mode de pratique prédominant. Les diagnostics les plus courants étaient les troubles de l'humeur (23,1%), de l'anxiété (17,7%) et de la schizophrénie (16,2%). Des programmes de formation médicale et de surveillance de la qualité sont proposés pour améliorer la qualité des prescriptions de psychotropes et modifier la pratique de la pharmacothérapie multiple.

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Introduction

The writing of a correct and complete drug prescription is an important component of the entire scientific process, which starts with the patient–doctor relationship, comprehensive examination, appropriate investigations and finally diagnosis. Rational drug prescription avoids many potential adverse risks, negative consequences and complications which arise from inappropriate prescription of drugs [1]. Similarly, the accurate prescription of drugs, psychotropic and non-psychotropic, considerably reduces the suffering of patients, which is the primary objective of a physician, and it enhances the overall quality of care and the satisfaction of patients. It also decreases the considerable cost of management of patients and hence state expenditure. With the rapid biotechnological developments the pharmaceutical companies around the world are producing a large number and variety of drugs. Some of these drugs are expensive, although their therapeutic efficacy may not be great. It is essential therefore that doctors have access to the most appropriate drugs.

There have been many studies on the prescribing habits of physicians in industrialized countries but only a few relevant studies have been conducted in Saudi Arabia, all of which investigated the prescription patterns for non-psychotropic drugs [2–6]. In general, these studies have found inappropriate drug prescription by physicians. As a corollary, they have recommended proper auditing and drug prescribing policies, quality assurance monitoring, continuous medical education, establishment of pharmacoepidemiological units and further research. To our knowledge, no study has been conducted on psychotropic drugs prescription in Saudi Arabia or neighbouring countries.

This descriptive study aimed to describe the pattern of psychotropic drugs prescription for outpatients attending the Buraidah Mental Health Hospital.

Materials and methods

The prescription slip used in the hospital includes the following items: hospital name, file number, complete name of the patient, age, sex, nationality, consultant in charge, department, unit, diagnosis/problems, name of the drug, dosage, frequency, duration, instruction, name and signature of the physician and date. The slip must be legibly completed by the consultants. All physicians strictly follow the hospital policy of writing one drug per prescription slip. A patient could receive a minimum of one and a maximum of five prescriptions per visit.

At the time of consultation, physicians see the original medical file of the patients, discuss with them any immediate psychiatric problem, note down the prescribed drugs in their respective files and write the prescriptions. No other members of the hospital staff are allowed to write prescriptions for patients. The cross-checking of written prescriptions with that of information noted in the medical files and explanation of the absence of missed data require an independent study in which the responsible physicians should also be interviewed for a full analysis.

The sample of this study comprised approximately 35.0% of drug prescriptions ($n = 18\ 265$), which were systematically, randomly selected (every third prescription) over a 1-year period, from 24 January 1996 to 25 December 1996. The total number of prescriptions filled for patients in 1 year was 52 186; thus, the sample was statistically a robust representation. Relevant data

were directly entered into the computer for appropriate frequency analysis.

The physicians were not informed of the research. This was considered necessary, otherwise they would have been particularly careful to write complete prescriptions.

Results

Table 1 gives details of the data missing in the prescriptions evaluated. The mean number of prescriptions lacking a specific item was 1195.7 (SD = 926.36). The most common items missing were the duration of treatment ($n = 3425$, 18.75%), sex ($n = 1689$, 9.25%), age ($n = 1598$, 8.75%) and the diagnosis ($n = 1370$, 7.50%). According to the evaluation of the pharmacist, who consulted recognized drug interaction alert charts [7], 503 prescriptions should have alerted the personnel concerned about possible drug interactions. Although drug interactions are not noted in the prescription slip, patients must be told formally by the physicians of their possible occurrence.

Table 1 Missing information found in the prescriptions evaluated ($n = 18\ 265$)

Variable	No.	%
File number ^a	539	2.95
Name of patient	229	1.25
Age	1598	8.75
Sex	1689	9.25
Nationality	594	3.25
Diagnosis	1370	7.50
Duration of treatment	3425	18.75
Forms of drug	1142	6.25
Dosages	868	4.75
Drug interactions ^b	503	2.75

^aPatient's medical file

^bBased on scientific alert charts of drug interactions

Table 2 shows the frequency of the medications prescribed. In decreasing order they were antipsychotics ($n = 6054$, 33.1%), antidepressants ($n = 4232$, 23.2%), anticholinergics ($n = 4012$, 22.0%) and an-

Table 2 Frequency of prescribed medications ($n = 18\ 265$)

Variable	No.	%
<i>Antipsychotics</i>		
Haloperidol	1425	7.8
Trifluoperazine	1228	6.7
Thioridazine	1202	6.6
Chlorpromazine	1100	6.0
Perphenazine	273	1.5
Sulpiride	96	0.5
Long-acting antipsychotics	730	4.1
Total	6054	33.1
<i>Antidepressants</i>		
Amitriptyline	1675	9.2
Imipramine	1520	8.3
Maprotyline	585	3.2
Clomipramine	452	2.5
Total	4232	23.2
<i>Anticholinergics</i>		
Trihexyphenidyl HCl	2680	14.7
Benztropine mesylate	1240	6.8
Promethazine	92	0.5
Total	4012	22.0
<i>Anticonvulsants</i>		
Carbamazepine	830	4.5
Dilantin sodium	650	3.6
Phenobarbitone	635	3.5
Ethosuccinimide	130	0.7
Sodium valproate	115	0.6
Total	2360	12.9
<i>Benzodiazepines</i>		
Diazepam	382	2.1
Clonazepam	124	0.7
Triazolam	114	0.6
Total	620	3.4
<i>Miscellaneous</i>		
	987	5.4

Table 3 Frequency of diagnoses noted in prescriptions ($n = 16\ 895$)

Diagnosis	No.	%
Mood disorders	3898	23.1
Anxiety disorders	2986	17.7
Schizophrenic disorders	2732	16.2
Substance use disorders	1223	7.2
Seizure disorders	1184	7.0
Somatoform disorders	995	5.9
Mental subnormality	784	4.6
Drug-induced psychotic disorders	649	3.8
Postpartum psychosis	388	2.3
Senile dementia	204	1.2
Delusional disorders	198	1.2
Personality disorders	154	0.9
Others	1500	8.9

tionconvulsants ($n = 2360$, 12.9%). The most frequently prescribed depot antipsychotics ($n = 730$, 4.1%) were fluphenazine decanoate ($n = 365$, 2.0%) and haloperidol decanoate ($n = 310$, 1.7%). The other long-acting antipsychotics, including flupenthixiol ($n = 45$, 0.2%) and clopenthixiol ($n = 10$, 0.1%) were not frequently prescribed. Benzodiazepines ($n = 620$, 3.4%) were not frequently prescribed, diazepam being the type most often prescribed ($n = 382$, 2.1%). Miscellaneous drugs ($n = 987$) constituted 5.4% of the prescriptions. Lithium carbonate accounted for 0.6% of the prescriptions ($n = 104$). Non-psychotropic medications ($n = 883$, 4.8%) included B-complex vitamins ($n = 432$, 2.4%), propranolol ($n = 128$, 0.7%), and pain killers, antihistamines and antacids ($n = 323$, 1.8%).

Antipsychotics were combined with, in decreasing order, anticholinergics, antidepressants, anticonvulsants and benzodiaz-

epines. Polypharmacy was particularly noted with anticonvulsants.

Table 3 shows the diagnoses noted in the evaluated prescriptions ($n = 16\ 895$) in decreasing frequency. Mood ($n = 3898$, 23.1%), anxiety ($n = 2986$, 17.7%) and schizophrenic disorders ($n = 2732$, 16.2%) were the most common diagnoses; personality disorders ($n = 154$, 0.9%) were the least frequently diagnosed disorders. Other diagnoses ($n = 1500$, 8.9%) were a variety of miscellaneous disorders, which included stammering, enuresis, attention-deficit hyperactivity syndrome, various headaches, irritable bowel syndrome, sexual dysfunctions, sleep disorders, adjustment disorders, dysmorphophobia, fugue states and factitious conditions.

Discussion

Three main results emerged during the final analysis of the data. First, a proportion of prescriptions for psychotropic drugs were not fully completed by the psychiatrists. This missing information included file number, name of the patient, age, sex, nationality, diagnosis, duration of treatment, and several items related to the drug itself. As to our knowledge there are no comparable data on psychotropic drugs prescriptions in Saudi Arabia, our findings, whenever necessary, will be discussed in relation to local and international studies which evaluated non-psychotropic and psychotropic drugs prescriptions, respectively. The figures of the data missing in the prescriptions evaluated are fairly consistent with data reported in other studies on non-psychotropic [5] and psychotropic [8] drugs prescriptions. Missing data in drug prescriptions could lead to numerous problems, including wrong dispensation of drugs, dispensation of drugs to the wrong patients,

both of which could result in medical complications and legal problems.

This finding of missing data emphasizes the need for certain procedures to be adhered to. First, the physicians should complete the prescription slips clearly and in full. Second, if they unintentionally fail to fill in all the relevant data, the outpatient nursing staff as well as the drug dispensors should identify such prescriptions and return them to the physician for completion. No drugs should be dispensed before a prescription slip is fully completed by the physician and understood by the dispenser. Any intentional malpractice by physicians or dispensors should be dealt with appropriately by the relevant authorities. A quality assurance monitoring team might be of tremendous help in rectifying prescription-related errors.

The second notable finding was the emergence of four groups of drugs dispensed to outpatient clients. These were antipsychotics, antidepressants, anticholinergics and anticonvulsants. Similar patterns of psychotropic drugs prescriptions have been reported from other countries [8,9].

Antipsychotic drugs were the most frequently prescribed medication; this could be because these drugs are dispensed to organic as well as functional psychotic, neurotic and mood disorder patients. However, in the latter two types of patients, low to modest doses of these medications were prescribed, which is common.

Anticonvulsants were the fourth major group of drugs prescribed, which may be because hospital policy allows epileptic patients of all age groups to be treated whether or not they have psychiatric manifestations. This policy is being modified because neurological clinics are now well established in different general and specialist hospitals of Al-Qassim Region. Therefore inevitably, the frequency of

anticonvulsant drugs prescription in the hospital will decrease in future. However, two anticonvulsants (carbamazepine and sodium valproate) have recently been recommended in the treatment of bipolar disorders and other psychotic conditions, especially if associated with uncontrolled aggression and impulsiveness.

Benzodiazepines were the drugs least frequently prescribed by physicians as expected. It illustrates the effectiveness of the Ministry of Health recommendations intended to restrict the use of benzodiazepines. This was because during the 1980s benzodiazepines were overprescribed and associated with increased problems of dependency [10]. The powerful effects of legislation in order to decrease the unnecessary use of psychotropic drugs in long-term patients, without affecting the quality of care, has been shown by other researchers [11].

A small number of prescriptions were for non-psychotropic medications, which were mainly vitamins. In general, vitamins have been over-prescribed as shown by one study [5]. In psychiatric practice, the real therapeutic impact of vitamins on the psychological condition of the patient needs to be studied.

After excluding all the prescriptions with incomplete data, except those only missing file numbers, appropriate analysis was performed to see whether or not polypharmacy was the general pattern. Anticholinergic drugs prescriptions were also evaluated. It was found that the majority of psychotic patients (85%), (schizophrenic, affective and organic) were given multiple drugs (> 2 drugs) selected from different groups of psychotropics, including anticholinergic medications. This prescribing pattern is consistent with other studies [8,12]. Patients with mania and schizophrenia tend to receive multiple psychotropic drugs

prescribed by psychiatrists as well as by general practitioners [12]. The pros and cons of polypharmacy and the concomitant use of anticholinergic drugs have been widely discussed [13-16]. In general, polypharmacy has been discouraged in favour of monotherapy [17] and the judicious use of anticholinergics [13-16] has been recommended in mental patients. Furthermore, we feel that in the present time of economic constraints, monotherapy should be the predominant mode for mental patients.

The third major finding was the pattern of prescriptions in accordance with the psychiatric diagnoses of the patients. The pattern of psychiatric morbidity is consistent with the findings of other studies [17-19]. In one pilot study of the clinical and psychopharmacological practice of psychiatrists, West and colleagues [20] reported that 53% of patients were diagnosed as having DSM-IV mood disorder. It could be concluded that in outpatient clinics the mild to moderate psychiatric disorders, such as anxiety and mood disorders, constitute the larger portion as compared to patients admitted with major psychotic disorders. This finding is substantiated by the written prescriptions for the majority of patients with such diagnoses. Counselling or brief psychotherapy should be seriously considered as an alternative to psychotropic drugs in patients with minor psychiatric conditions.

Our study did not explore the variables related to psychiatrists which could affect prescriptions. However, in one study, it was revealed that the composition of the psychiatrists' case-loads, their work setting and educational background, but not their sociodemographic features, appear to influence their prescribing patterns of pharmacotherapy [21]. Our study did not investigate the effect of the gender of patients or that of the physicians on prescribing patterns. However, there is a wealth of

evidence that more psychotropic drugs are prescribed to female than to male patients. In one study, it was found that female patients were significantly more likely to be prescribed psychotropic drugs of all types from a female than from a male physician [22]. In this context, the diagnosis of patients and the severity of symptoms would further clarify the pattern of overprescription and underprescription of psychotropic drugs to female and male patients, respectively. Similarly, the negative consequences of inappropriate drug prescription should be explored systematically. Moreover, as it is known that the types of settings of a study can affect the results, we are now analysing the prescriptions written by mental health professionals both in emergency and inpatient services.

In summary, this descriptive study found a proportion of psychotropic drug prescriptions were not fully completed by the practising psychiatrists. In addition, the main psychotropic drugs prescribed for the outpatient clients, who generally presented with mood, anxiety, schizophrenia and organic psychosis and neurological disorders, were neuroleptics, antidepressants, anticholinergics and anticonvulsants. We suggest that appropriately tailored quality monitoring programmes could be of tremendous help in improving the pattern of prescription. Relevant medical education courses may also help in modifying the prescribing habits of physicians, in particular polypharmacy and the use of anticholinergics.

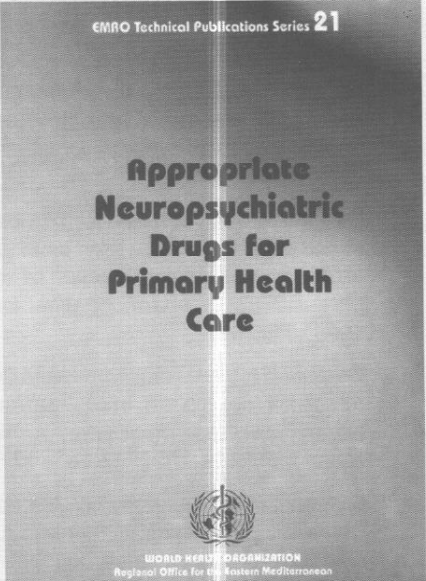
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Who is the target audience?

The publication will be of special interest to decision makers who have responsibility for mental health programmes, mental health professionals involved in training different levels of health personnel and all those concerned with the integration of mental health into the primary health care system.

Why has this book been written?

One aspect of a comprehensive mental health programme is the prevention of neuropsychiatric diseases. The provision of appropriate neuropsychiatric drugs is an important step to assure the availability of these drugs at levels necessary and to safeguard against their abuse or misuse. It is for these reasons that the Regional Office has brought out this publication.

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