Developing and Maintaining Adherence to Long-Term Drug-Taking Regimens

by Ian R.H. Falloon

Abstract

Prolonged adherence to neuroleptic medication by patients with schizophrenia involves many complex issues. These vary markedly from case to case, and poor compliance is effectively resolved only when the attitudes and behaviors of individual cases are carefully analyzed. This article describes some of the aspects that commonly contribute to deficient compliance in clinical practice, and offers suggestions for resolving these problems.

Continuation of drug taking for months and years after recovery from an acute illness is a very difficult undertaking. This is particularly so when the drugs prescribed have unpleasant effects and provide few subjective benefits. Thus, it may be surprising to learn that adherence to prescribed regimens of neuroleptic drug therapy in persons who have been treated for a florid episode of schizophrenia is quite high. Excellent compliance with tablet taking is generally observed in 60 percent of cases (Parkes, Brown, and Monck 1962; Renton et al. 1963; Wilcox, Gillan, and Hare 1965; Van Putten 1974; Blackwell 1976, 1979). This percentage increases to 80 percent in cases who receive intramuscular depot preparations (Johnson and Freeman 1973). In view of the behavioral and cognitive disturbances of schizophrenia, it is remarkable that patients with this diagnosis adhere to treatment as well as other medical outpatients (Soskis 1978).

The benefits of continued neuroleptics in preventing clinical exacerbations of schizophrenia are unequivocal (Davis et al. 1980). It is possible that subgroups of remitted schizophrenics may not require continuous medication (Herz, Szymanski, and Simon 1982), but until such patients can be identified with a high degree of confidence it behooves individual clinicians to aim for 100 percent adherence to long-term drug regimens for all persons who have experienced a definite episode of schizophrenia.

Compliance is a behavioral response that is learned by the patient. The process by which a patient learns habitual drug taking may be interfered with by a number of environmental contingencies. On the other hand, the prescribing therapist may facilitate learning of regular drug taking through a variety of relatively straightforward strategies. This article outlines some of the common behavioral deficits that contribute to reduced compliance and describes a range of specific strategies that have effectively enhanced adherence to a rigorous treatment program.

Behavioral Analysis of Drug Taking

Adherence to long-term drug taking is a complex phenomenon. There are a multitude of explanations for reduced compliance. In order to achieve good compliance, a careful review of the drug-taking behavior of individual patients is essential. In addition to reviewing the drug-taking pattern of each patient, it may be important to explore the patient's attitudes and feelings toward the prescribed regimen. Such a behavioral analysis is best conducted at the initiation of continuation therapy, but may need to be reviewed periodically throughout the period of treatment. Potential problems may be apparent at an early stage, and intervention at this point may forestall

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the development of major difficulties. Although the drug-taking patterns of individual patients differ, the issues leading to reduced compliance are shared by many patients. These include:

Aftercare Clinic Attendance. Attendance for clinic appointments is a major factor in drug compliance. Clearly, the patient must receive his prescribed tablets or injections. However, as Parkes, Brown, and Monck (1962) noted, nonattendance at aftercare clinics in the first month after hospital discharge is the most common cause of failure of continuation drug therapy. There are many possible reasons for this. The first, and most obvious, is that patients (and their community caregivers) are not provided with clear instructions regarding the rationale for clinic attendance, or even told other basic facts, such as the precise location of the clinic or time of appointment. Often patients are told to arrange their own appointments for aftercare. Such simple administrative deficits should not be overlooked. Patients who are recovering from an episode of schizophrenia are seldom free from deficits of information processing at the time they are discharged, and special care is required to ensure subsequent clinic attendance.

A further, usually overlooked, problem regarding clinic attendance concerns the social anxiety exhibited by many schizophrenics. Leff and Wing (1971) reported the anxiety many patients experienced in crowded clinic waiting rooms as a possible reason for avoidance of clinic attendance. Efforts to structure the clinic milieu so that it is nonthreatening and welcoming, and to avoid long waiting periods, may assist the socially anxious schizophrenic patient. More severe cases may require specific anxiety management programs to treat their social phobias.

Another issue for better functioning patients is taking time off work. Upon return to work after a period of disability, most people are somewhat reluctant to ask for frequent time off to attend clinics. While most aftercare clinics are open outside the usual working hours to cater to such cases, frequently patients lack the assertive skills to discuss this issue with their employers in a frank and open manner. Brief role-playing rehearsal, with the therapist taking the part of the employer, may assist the patient to ask for time off where appropriate. Efficient clinic operation where patients are reinforced for their timely attendance by being seen at their appointed times assists the person who wants to avoid excessive time off work.

Thus, aftercare clinic attendance can be substantially improved merely through administrative efficiency. Care to ensure that patients are provided with appointments, sent cards to remind them of their appointments, that time in waiting areas is minimized, contact with clinic staff (both clerical and professional) is nonthreatening, and clinics are open at hours that meet the needs of the patient population may all prove beneficial (Rudd 1979; Blackwell 1979). Some programs have developed procedures, such as having volunteers and community workers take patients to their first clinic appointments (Peterson, Wolkon, and Wirth 1981); others have created a recreational milieu for the clinics (Lamb 1982). However, it should be noted that socially anxious patients may be threatened by group settings where they are expected to perform in front of people, and may find recreational settings even more anxiety provoking.

Finally, where patients do not attend the clinic despite prompting, it may be necessary to provide an assertive outreach service. A clinic nurse visits the patient, investigates the reasons for nonattendance, ensures that a supply of medication is available, and attempts to establish regular attendance. Even when long-acting intramuscular preparations are used, nonattendance at the clinic is a not infrequent cause of treatment failure. Patients who find injections unpleasant are likely to avoid having them as frequently as prescribed. The visiting nurse is an important resource in ensuring continued treatment with both oral and parenteral drugs (Johnson and Freeman 1973).

Forgetfulness. Not all poor compliance results from resistance to taking the medication. Perhaps the most common reason for most people's not continuing to take drugs regularly is the age-old problem of forgetfulness. This problem is magnified in schizophrenia when conceptual disorganization is present. One woman patient frequently forgot whether she had taken her tablets, while at other times a hallucinatory voice would tell her not to take the tablet, or subsequently, not to attend the clinic to receive her injection.

During hospitalization, drug compliance is maintained by nursing staff with patients taking a passive role. This routine does not provide satisfactory training for patients to take control of initiating their own drug-taking behavior when they return home. In an attempt to train patients to self-monitor their tablet taking, Henderson (1967) gave them their own bottles of tablets before hospital discharge. Although fraught with difficulties from the ward management viewpoint, this procedure enables patients’ abilities to...
manage drug taking to be evaluated and strategies devised to remedy observed deficiencies.

The forgetful patient may benefit from prompting procedures as well as from a simplification of the drug-taking regimen. Once-daily doses of tablets may help. A wide range of prompting strategies may be developed to suit the circumstances of each patient. One patient, who frequently forgot to take her tablets in the evening, was noted almost never to miss brushing her teeth every morning and evening. She was taught to place a tablet next to her toothpaste when she brushed her teeth in the morning and to swallow it when she brushed her teeth before retiring at night. Her mother was able to check unobtrusively that the tablet was in place during the day and had been taken at night.

Wherever possible, it seems preferable for patients to take responsibility for their own tablet taking. Irritating nagging by concerned parents or other household members is usually counterproductive. Family members may be instructed in effective, supportive prompting procedures where necessary.

Some patients have used plastic containers that hold the dosages of medication for each day of the week. This provides a simple self-monitoring aid and can be carried in a purse or pocket for persons who need to take medication at work or away from home. Packaging of tablets in daily doses has been effective in improving compliance in experimental programs (Demetral et al. 1981). However, commercial packaging has not yet been provided.

Unpleasant Effects. The unpleasant side effects of neuroleptics are well-documented factors that contribute to reduced compliance. The psychomotor effects of akathisia and akinesia have been most clearly linked to poor compliance (Van Putten 1974). It is apparent that patients’ subjective, unpleasant experiences of the drugs are more closely associated with reduced ingestion than are their more overt behavioral abnormalities (Van Putten and May 1978).

It is difficult for patients to communicate clearly the nature of these subtle, unpleasant feelings to their prescribing physicians, and as a result, they are frequently overlooked. Patients notice that they feel better when they do not take their medication and, quite logically, believe that the drugs are harmful. A further unwanted effect is the interaction between the neuroleptics and alcohol. Patients often skip doses when they drink or attend social gatherings to avoid the potentiating effect of the drugs on the alcohol. At other times, misinformed patients stop taking their neuroleptics when prescribed antibiotics, analgesics, and other drugs for acute complaints.

A lack of understanding about the effects and side effects of the drugs is a factor that contributes to reduced compliance. Patients and their household members may be educated about the side effects expected from the drugs they are prescribed, and strategies for coping with the side effects may be carefully explained. They may be told:

- The side effects are usually worse soon after starting a neuroleptic drug and tend to diminish with time. Continuing to take the medication regularly and waiting a week or two will lead to extinction of most unpleasant effects.

Patient and Family Attitudes. Patients who share positive attitudes about the benefits of the drugs with household members appear likely to adhere to long-term drug therapy. However, when the patient, his family members, or both, are antagonistic toward the drugs, reduced compliance is probable.

Negative attitudes that are commonly expressed include:

1 A handout for patients detailing this education about neuroleptic medication and its unwanted effects is available from the author.
Drugs should not be taken for a long time because they lead to dependence and addiction.

If I need drugs, I must be sick.

Taking drugs is a sign of weak character.

These attitudes can be changed through education of the patient and the patient's household members about the nature of schizophrenia, the expected benefits from regular medication, the nature of the medication and its mode of action, and the potential risks and problems associated with the medication (McGill et al. 1983). It is crucial to include household members in the education process to avoid their sabotaging patients' compliance by advising discontinuation of the medication. The goal is to establish the patient and his support network as informed consumers with a sufficient knowledge base to participate actively in monitoring the effects of the medication. This approach is similar to that used in teaching diabetic patients about insulin.

**Maintenance of Compliance.** It cannot be taken for granted that good compliance, once established, will be sustained indefinitely. For a patient who remains symptom-free over a period of months, there is little inherent reinforcement for continued compliance. Thus, even when the patient experiences no dysphoric feelings from the neuroleptics, there is little motivation to sustain regular medication taking. As a result, missed doses become more frequent.

Several behavioral strategies have been used to deal with this maintenance problem.

**Incentives.** A specific incentive program may be developed that rewards tablet-taking behavior in a systematic fashion. Parents of young children often use this strategy when they give their child a piece of candy after the child takes the medicine. Drug manufacturers have developed pleasant-tasting medicines for children that have inherent reinforcing properties. In a similar manner, a schizophrenic patient improved his compliance when he received a chocolate bar or ice cream treat immediately after he had taken his tablets after dinner. This reinforcement was coupled with praise for his tablet taking and after the primary reinforcer (food) was withdrawn, the secondary social reinforcement (praise) was sufficient to maintain excellent compliance. Tablet taking became a positive experience for the patient and his family instead of an unpleasant daily event.

In other cases, the use of praise alone contingent upon tablet taking was effective in shaping and maintaining tablet taking, whereas focus on missed doses with nagging and coercion was seldom effective in inducing sustained improvements of compliance.

It should be noted that similar attention and praise from the prescribing physician for reported drug compliance is a powerful reinforcement for many patients. On the other hand, when the physician seldom inquires about drug-taking behavior, patients are inclined to think that it is not particularly important and are more likely to reduce compliance.

The advent of plasma level estimations of neuroleptics provides another avenue for feedback to the physician and patient. Where compliance can be monitored in this manner, it is important for the physician to provide continued praise to the patient whose plasma shows sustained therapeutic levels, and not merely to attend to patients whose plasma levels reflect subtherapeutic results. A mutual interest in the levels and their relationship with compliance can be developed between physician and patient. Where suspicions of poor compliance are supported by low or absent plasma levels, the therapist is able to approach this issue with greater confidence than is the case where evidence of poor compliance is circumstantial. However, the clinician should be aware of the rapid metabolizer, who, despite adequate reported compliance, has undetectable plasma levels. Where such cases are suspected, the patient may be given a dose of medication and have serial plasma estimations at hourly intervals. If these prove undetectable, intramuscular administration may be tried with a further series of plasma levels.

An additional benefit of plasma level estimations is the ability of the physician to lower doses to very low levels when evidence of adequate plasma levels minimizes the risk of subtherapeutic reduction. Patients are encouraged by this increased therapeutic confidence and sustained compliance may result.

**Cognitive structuring.** The patient, the family, and the physician may all contribute to enhanced drug compliance through repeatedly rehearsing the rationale for continued drug therapy. This will have been clearly outlined in initial education of both patient and family, but requires repeated discussion before it is firmly instilled in most persons' minds. In some cases, despite adequate drug taking, considerable doubts of the merits of continued medication remain. Over time, this lack of faith in the treatment leads to reduced compliance. In such cases, specific cognitive structuring may be used.
one case, a patient who was a heavy smoker was instructed to make a card that fitted into his cigarette pack and to write on it three reasons for continuing to take medication regularly; he wrote:

I take regular medication because:
1. It makes me calm.
2. It stops me hearing voices.
3. It helps me sleep.

He was told to pull out this card each time he took a cigarette and to read it three times before he lit up. Compliance, albeit somewhat irregular, was maintained in this case.

A simple rationale for continued drug taking involves the "insurance policy" analogy. Patients are instructed to consider regular neuroleptics as insurance to guard against the high risk of relapse, rehospitalization, and the associated social disruption in their lives. A small regular investment provides a cushion in the advent of such a disaster, that may entirely prevent such dire consequences, or at least modify the severity of exacerbations substantially. Patients who have been taught to expect relapses, even when perfectly compliant with drug taking, are better prepared to cope with a recrudescence of symptoms without losing respect for the treatment. It seems important that the consumer be provided with accurate information about the effectiveness and risks of the illness and its management.

Conclusions

The value of low-dose neuroleptic drug therapy in the prevention of subsequent episodes of florid schizophrenia is now universally accepted. Although most patients show good compliance with continuation drug therapy, at least in the short term, a substantial group show poor adherence to the prescribed regimen. In some cases, this problem can be corrected by parenteral administration of depot preparations. However, it is important to remember that the patient who refuses to come to the clinic to receive tablets is unlikely to come for injections. The reasons for reduced compliance are multidetermined and do not readily respond to blanket solutions. Rather, an individualized approach is advocated that determines the assets and deficits of each person's drug-taking behavior, and, where necessary, develops specific interpersonal strategies to enhance compliance.

Basic to this approach is a cooperative, problem-solving relationship between the prescribing physician and the patient. The caring, concerned physician who listens empathically to the complaints and difficulties of the patient regarding his medication, who provides detailed education about the rationale for long-term therapy, and who is sensitive to the role of the patient's support system in assisting with medication compliance represents an important dimension in the maintenance of long-term drug-taking behavior. At times, detailed behavioral strategies may involve consultation with behavioral psychotherapists.

Patient and family education about schizophrenia has received considerable attention recently. In a study of psychosocial interventions in schizophrenia, adequate drug compliance (defined as at least 50 percent of prescribed dosage) was maintained in each of 36 patients over a 9-month period (Falloon et al. 1982). The compliance-enhancing methods described earlier in this article were used where indicated. It was noted that compliance was somewhat better in the randomly assigned cohort of patients who received systematic education and behavioral family therapy than in the cohort receiving less-structured education and individual supportive therapy in addition to their neuroleptics. Sixty-one percent of patients in the family therapy group showed excellent compliance. Medication compliance was significantly associated with the patients' level of knowledge about schizophrenia.

It might be assumed that better compliance meant that a greater amount of neuroleptic drug was ingested by family therapy patients. However, this was not the case. The mean ingested dosage (in chlorpromazine equivalents) was 245 mg per day for the family therapy group compared to 338 mg per day for the individually treated patients over the 9-month period. Although this difference was not significant, it suggests that psychosocial interventions might be effective both in enhancing compliance with drug taking and in reducing the need for higher doses of medication. The interaction between psychosocial treatment and drug therapy is a complex one that deserves further carefully controlled investigation.

References


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