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Enhancing Medication Interest and Medication Follow-through in the Treatment of Schizophrenia

A 3-Part Series

Prevalence, Ramifications, and Implications of Nonadherence and “Why It Happens” in the Treatment of Schizophrenia

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Continuing Education Information

Target Audience

This activity has been designed to meet the educational needs of practicing psychiatrists involved in the management of patients with schizophrenia.

Statement of Need/Program Overview

Psychiatrists caring for patients with schizophrenia are challenged by medication nonadherence, which plays a significant role in precipitating relapses of illness. Although all relapses cannot be prevented, appropriate pharmacologic and psychosocial strategies can be implemented to enhance medication interest and follow-through. This *Counseling Points*™ CME program is designed to educate psychiatrists about the latest interviewing, motivational, and management strategies in this area of medicine.

Educational Objectives

After completing this activity, the participant should be better able to:

- Identify the prevalence of nonadherence to prescribed medications for schizophrenia
- Outline the impact of low interest in medication and poor follow-through on taking medication on such issues as the course of illness, functional outcomes, relapse, mortality, and effect on family members
- Discuss the choice-related reasons for nonadherence that lead patients with schizophrenia to not want to take medications
- Discuss the situational barriers to adherence that make it difficult for patients who choose to take their medications to take them as prescribed

Accreditation Statement

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Enhancing Medication Interest and Medication Follow-through in the Treatment of Schizophrenia

The Prevalence, Ramifications, and Implications of Nonadherence and “Why It Happens” in the Treatment of Schizophrenia

Introduction

In helping patients recover from schizophrenia, few hurdles are higher than nonadherence. Significant advances have been made in the science and art of improving medication adherence. In this three-issue series of *Counseling Points*[™], some of these advances will be explored, delineated by three experts in the field of improving medication adherence.

The discussion will be framed from the innovative perspective of the “medication interest model,” which has been evolving for 20 years.^{2,3} The medication interest model postulates that two key components exist concerning the enhancement of medication adherence. First, the cornerstone of the process consists of collaboratively working with patients so that each patient’s personal interest in choosing and staying on a medication is maximized. The model emphasizes the importance of viewing adherence as beginning with patient choice and provides specific interviewing techniques that may enhance a patient’s interest in trying a medication and subsequently staying on it. The second step of the model is the ability of psychiatrists and case managers to effectively join forces with the patient, the patient’s family, and the community to reduce the numerous external obstacles that can prevent a patient from being able to “follow through” with his or her interest in taking antipsychotics. The situational roadblocks to medication follow-through are many, and include problems as diverse as remembering to take medications, the cost of medications, and interpersonal and cultural pressures to stop using medications.

Advances in neuroscience related to improving antipsychotics, as well as new problems such as the

“We prescribing clinicians continue to struggle with the most basic of problems: how to get our patients to take the pills that we think they need in the way we think they should. As efficacious as the medications are in research reports and clinical studies, they cannot be effective without moving from the prescription vial to the patient’s body.”¹

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metabolic syndromes seen with atypical antipsychotics, are factors that potentially impact on both steps of the medication interest model and will be examined in their relationship to medication adherence in the final issue of the series. Positive developments not only include the improvement of the efficacy of antipsychotic agents, but also advances made with regard to decreasing their side-effect profiles and improving their ease of administration (for example, as with intramuscular administration).

Throughout all three issues, terms such as “noncompliance” and “nonadherence” are seldom used (except when reporting research findings and when used in article titles where the traditional terms may be necessary for literature reviews). Instead, nonadherence is addressed by one or both of its components—a patient’s internal lack of interest in taking a medication or the situational, external roadblocks that prevent a patient who wants to take a medication from following through to do so. This careful avoidance of potentially oppositional terms such as “noncompliance” and “nonadherence” emphasizes one of the pivotal principles of the medication interest model: The goal of clinicians in creating an atmosphere of “going with” patients as allies in the treatment of their illnesses as opposed to “going against” them as antagonists to their beliefs about medications.

This nonoppositional stance is rooted in a decades-long tradition in the medical literature questioning the utility of words such as compliance and adherence,⁴⁻⁶ including the support of former Surgeon General C. Everett Koop, MD, ScD, for the adoption of the collaborative term “medication interest.”² For instance, from the field of internal medicine, Steiner and Earnest make the argument, “Words make a difference. The terms compli-

ance and adherence should be abandoned because they subtly exaggerate the importance of the clinician, describe behavior inaccurately, and shed little light on motivations.⁷⁷ In keeping with this spirit, the medication interest model encourages clinicians to replace oppositional, negative, or neutral terms such as compliance, adherence, and persistency with the empowering and positive concept of “medication interest.”

Evidence Base Regarding the Prevalence, Ramifications, and Implications of Nonadherence

Whether it is the fact that patients with schizophrenia choose not to take their medications or that external obstacles such as cost or an inability to remember prevents their effective use, one point is apparent: The potential benefit of available medications can be limited by the degree to which they are taken appropriately. As James Ellison elegantly emphasizes in the opening epigram, no medicine works inside a bottle.¹

Adherence rates are often reported as the percentage of the prescribed doses of medication that the patient actually took over a specified interval. Population-based adherence rates are often measured using databases that allow investigators to assess the proportion of prescriptions that were filled over a specified period of time. In some illnesses, the timing of medication-taking might also be important. Whether it is the fact that patients have a higher interest or better follow-through, it has been found that adherence rates are typically higher in patients with acute conditions in comparison to those with chronic conditions.⁸ This has important implications in chronic illnesses such as schizophrenia, bipolar disorder, and depression where nonadherence is very high.⁹⁻¹¹

Lacro et al reviewed the literature on prevalence and risk factors for nonadherence in schizophrenia.¹⁰ Among the 10 reports that met a strict set of study inclusion criteria, they reported a mean rate of nonadherence of 41%; those patients who met an even stricter set of inclusion criteria reported a 50% rate of nonadherence. Although it was hoped that the introduction of “atypical” antipsychotics with fewer neurologic side effects would reduce rates of nonadherence to a clinically meaningful degree, this does not appear to be the case.

Cooper et al carried out a population-based cohort study involving over 6,000 patients treated with atypical antipsychotics.¹¹ Patients still undergoing treatment

with any atypical antipsychotic drug 1 year after their first prescription were considered persistent. Of those patients, individuals with a medication supply for at least 80% of the days tracked were considered adherent. Sixty-eight percent were judged persistent, and, of those, 79% were judged compliant. As we will see, missing 10%–20% of medication prescribed can have significant clinical consequences.

Clearly under-use or non-use of prescribed medication is an enormous challenge.

Diaz et al used the Medication Events Monitoring System (MEMS) to follow 50 subjects who were consecutively discharged from an inpatient unit with a DSM-IV diagnosis of schizophrenia or schizoaffective disorder.¹² Adherence rates were calculated as the number of bottle openings over the number of prescribed openings in a 3-month time period. The primary analyses, which assumed that adherence was zero if MEMS data were missing for any reason, found an average adherence of 38% during a 3-month follow-up period.

Clearly under-use or non-use of prescribed medication is an enormous challenge. It is also clear that both patients and clinicians significantly overestimate the degree to which their patients are genuinely interested in taking their medications and/or their subsequent ability to do so.^{13,14}

Impact of Nonadherence on the Course of Illness, Functional Outcomes, Relapse, and Mortality Risks

Relapse continues to be a major public health problem in the treatment of schizophrenia. Each relapse results in enormous personal suffering, family and community burden, and increased health care costs. In addition, there is substantial disruption in psychosocial and vocational functioning and/or interference in achieving personal goals. Psychotic relapse is also associated with an increased risk of violence towards the self or others, and involvement in the criminal justice system.

Although we cannot prevent all relapses, we can prevent many if appropriate pharmacologic and psychosocial strategies can be implemented to improve both medication interest and follow-through—for nonadherence remains the single biggest factor in increasing rates of relapse. Robinson et al in a large cohort of

patients who had been successfully treated for their first episode of schizophrenia found that discontinuing medication was the single most powerful predictor of relapse.¹⁵ Patients who stopped taking their medication were five times more likely to relapse than those who continued on medication.

Valenstein et al and Weiden et al have reported on gaps in taking medication based on prescription refill data in large populations of patients.^{16,17} Even a gap in medication-taking as short as 10 days can result in a doubling of the risk of hospitalization. With longer gaps, the risk of readmission to the hospital continues to rise significantly, with gaps of greater than 30 days increasing the risk four-fold. Nonadherence has been shown to be a major contributor to the annual cost of admissions for relapsing patients.¹⁸ Increased adherence is also related to overall reductions in psychopathology, with a 20% increase in adherence being associated with a significant improvement in Positive and Negative Syndrome Scale (PANSS) scores over 1 year.¹⁹

Herings and Erkens reported on 603 patients with schizophrenia in The Netherlands using a medication-dispensing and hospital discharge database.²⁰ Adjusting for age and gender, they reported that a 30-day gap in medication treatment increased the relative risk of suicide attempts 4.2 times. (Thirty-three percent of the patients in their sample had a gap of at least 30 days).

Another enormous challenge in managing schizophrenia is that patients with this illness have a substantially shorter life expectancy (as much as 25 years).^{21,22} Although the lifetime risk of suicide in schizophrenia is generally believed to be 5%–10%, this does not fully account for increased mortality rates.²³ It appears that cardiovascular illness is an important factor as well. Many patients with this illness are overweight, have type II diabetes, smoke, get little exercise, have poor diets, have hypertension and dyslipidemia, and receive less than optimum medical management.

Enhanced medication interest and follow-through can also play a critical role in managing type II diabetes, hypertension, dyslipidemia, and other risk factors for increased mortality. On the other hand, some psychotropic medications can increase the risk of overweight and metabolic syndrome, and this risk needs to be managed as well.

Robinson et al reported on recovery rates in a large cohort of first-episode patients.²⁴ Recovery was defined utilizing criteria suggested by Liberman et al, which stipulate that improvement criteria must be met

in four domains and sustained concurrently for 2 years.²⁵ The four domains are: symptom remission; appropriate role function; ability to perform day-to-day living tasks without supervision; and social interactions. After 5 years of follow-up in a well-staffed, research clinic, only 14% of first-episode patients met the recovery criteria. Importantly, the relapse rate

Nonadherence has been shown to be a major contributor to the annual cost of admissions for relapsing patients.

across the 5 years was 82%, making it difficult to achieve recovery. As previously described, the single biggest predictor of relapse in this cohort was discontinuation of medication.¹⁵

Patients who discontinue medication or have inadequate interest in or use of medication are at enormous risk for relapse, rehospitalization, suicidality, deterioration in psychosocial and vocational function, family burden and conflict, as well as increased health care costs. Clearly our ability to successfully manage the challenge of medication interest and follow-through has enormous ramifications.

Why Many Patients with Schizophrenia Are Not Interested in Taking Medications: The Issue of Choice

The Role of Choice

Patients refuse medications or discontinue them for many reasons, but one of the major reasons for nonadherence is that they choose not to take them.^{26,27} Consequently, to understand why patients with schizophrenia and other major psychiatric disorders refuse medications, use them at lowered doses, or stop them, one must examine the phenomenology of how people make decisions—specifically, how do people choose to take a medication or choose to stop it?

Clearly, sometimes the psychotic process itself—grossly disorganized thought and/or severely impaired judgment—can disrupt a patient's ability to choose a medication. But it can be a mistake to assume that the major reason for lack of interest in medications among people coping with schizophrenia is related to the psychotic hallmarks of the illness. Psychosis fluctuates, both in its natural course and in relation to its response to medications. Yet during those periods of relative

recovery, many people with schizophrenia still choose not to take medications, just as many people with depression or non-psychiatric illnesses such as hypertension and diabetes choose not to take medications. Clearly, a variety of complex psychological processes must take place before any person decides whether to put a foreign substance—a drug—inside his or her body.

The Choice Triad and the Roots of the Medication Interest Model

The origins of the medication interest model began with Dr. Shawn Shea's involvement with a research study sponsored by the Robert Wood Johnson Foundation and led by the researcher Robert Drake from the Psychiatry Department of the Dartmouth Medical School in the late 1980s and early 1990s.²⁸ This case-management study pioneered the use of Continuous Treatment Teams (sometimes called ACT Teams) that focused upon helping the most ill dually diagnosed patients—all of whom had to have poorly controlled schizophrenia, schizoaffective disorder, or bipolar disorder as well as active alcohol or street drug abuse—a cohort with traditionally minimal interest in taking medications.

By the end of the study, this case-management team had decreased hospital days by 20 days per year per patient when compared with control outreach case-management teams, an impact primarily attributed to a high rate of recommended medication use. An effort was made by Shea and his team to operationalize the effective interviewing techniques leading to the high medication interest rate. In addition, as the case managers began to share their observations regarding their patients' reasons for staying on their medications, an integrating structural framework began to emerge.

A second source of interviewing techniques and conceptual theory originated from a series of over 200 medication interest workshops given by Shea over an 8-year span across the United States and Canada. These workshops included audiences providing a rich cross-fertilization of clinicians ranging from psychiatrists, psychiatric nurses, and case managers, to primary care physicians and clinicians. In each session, these front-line clinicians were asked to share their best practices regarding interviewing techniques that enhance interest in taking medications. These practices were subsequently integrated into the model.

When the study patients with poorly controlled schizophrenia and bipolar disorder who ultimately

chose to reliably take their medications shared their reasons for doing so, the answers fell into three broad categories. In a similar vein, when the clinicians in the workshops were asked why they—from their own personal experiences—had decided to take medications for themselves, they gave the same three broad categories of answers. These categories were subsequently called the “Choice Triad,” the steps of which are described in **Table 1**.

Table 1. The Choice Triad

People generally take medications because:

- Step 1)** They think that there is something wrong with them for which they personally want relief.
- Step 2)** They are motivated to try a medication because they believe that the medication has the potential to help bring them this relief (or perhaps prevent a serious future problem as with an antihypertensive agent or a vaccine).
- Step 3)** They personally believe that the pros of taking the medication outweigh the cons.

According to the model, most people won't reliably take medications unless they believe all three components of the Choice Triad. It would not be logical to do so. Moreover, most people seem to move through this progression in a serial fashion starting with step 1. With relatively few exceptions in the medication interest model, the decision of a patient to refuse or stop a medication is not viewed as resistance. Rather, it is viewed as a logical decision based upon the patient's personal set of beliefs related to the Choice Triad.

By way of illustration, a typical 18-year-old male experiencing his first break of schizophrenia often does not believe that there is something wrong with him (he does not believe step 1 applies to him). If a clinician suggests taking a medication that might make his tongue dart in and out like a lizard for the rest of his life, it would be rather foolish of him to comment, “Sounds like a great idea to me.” On the other hand, if, indeed, the 18-year-old earnestly believes that there is nothing wrong with him, it makes better sense for him to decline the invitation to “be medicated.” Such an 18-year-old is not being oppositional; he is not being resistant, he is being logical based upon his beliefs at that moment of time.

According to the model, the art of enhancing the patient's interest in taking any given medication (equally true for medications for diabetes and conges-

tive heart failure, as well as psychiatric disorders) lies in the ability of the clinician to uncover the beliefs of the patient on each of the components of the Choice Triad, while nurturing a powerful therapeutic alliance and ultimately transforming those beliefs that present roadblocks to medication interest.

The importance of developing a therapeutic alliance cannot be overstated, for the strength of the alliance determines the validity of the patient's answers to the explorations regarding his or her beliefs. In addition, the alliance arguably plays the most pivotal role in determining whether the patient subsequently chooses to follow the recommendations of the clinician. A patient does what we suggest not only because we make sense, but because he or she likes us.

Once the alliance is secured, beliefs that logically

The importance of developing a therapeutic alliance cannot be overstated, for the strength of the alliance determines the validity of the patient's answers to the explorations regarding his or her beliefs.

might block a patient's interest, including misinformation and false beliefs, can often be gently transformed utilizing numerous interviewing techniques (to be described in Issue #2 of this series) as well as adaptations of other collaborative interviewing models such as motivational interviewing or solution-focused therapy.²⁹⁻³⁸ A patient who truly comes to believe, in his or her gut, all three of the steps of the Choice Triad will probably not only have a high interest in taking a recommended medication, but may very well spontaneously ask for it. This is equally true for an antidepressant as for an oral hypoglycemic agent.

Towards A Deeper Understanding of Step 1 of the Choice Triad

To effectively utilize the interviewing techniques that will be described in Issue #2, it is important to better understand the roadblocks at the various steps of the Choice Triad. In this issue the focus will be limited to step 1—"the patient thinks that there is something wrong with him or her for which he/she personally wants relief"—for it serves as a nice illustrative prototype.

Obviously, stigmatization regarding schizophrenia can play a major role in a patient's lack of belief in step 1. Not as obviously, it is important to realize that this

step does not demand that the patient believe that he or she has schizophrenia. Rather, it states that the patient, under his or her own volition, has arrived at a personal conclusion that there is "something wrong" from which the patient personally wants relief.

All too often the roadblock at step 1 becomes the patient's belief that, "They are going to drag me in to see a shrink who is going to try to convince me that I have a disease I don't have (schizophrenia) and they are going to push me to take a medication I don't need or want." If a patient believes this statement, it makes total sense that he or she should refuse medications. In a similar fashion, there is probably no reader of this article who would take a medication with the potentially serious side effects of an antipsychotic unless the reader thought there was something seriously wrong warranting the risk. So why would we expect a patient to do so?

Note that the problem with the above stalemate is the oppositional feeling that has arisen between the patient and the prescriber, and not necessarily whether or not the patient believes that he or she has schizophrenia. The initial goal of the clinician may not be to "bring insight to the patient" that he or she has schizophrenia, but rather to help the patient independently arrive at a personal conclusion that there is "something wrong" with which the patient wants help. If done well, there is no perception by the patient that anything is "being pushed," including the idea that he or she has schizophrenia or the idea that he or she needs medications. These beliefs will undoubtedly be shared by the psychiatrist, but in a fashion that eliminates the sensation of oppositional push.

Following an actual case in real-time as it unfolds illuminates the power of this nuanced stance. A patient we shall call Jim enters the research protocol. He has had over a decade of highly disruptive episodes of schizophrenia, punctuated with acts of violence and many revolving door hospitalizations. In the previous 3 years, he has been in the state hospital over 100 days each year and, as one can imagine, he hates medications and psychiatrists—not necessarily in that order. He categorically denies that he has schizophrenia.

Jim is released from the state hospital on an involuntary outpatient commitment in which he is required to take depot medication, which he loathes. In the past, every time he began to decompensate, a clinician would recommend that he increase his outpatient antipsychotic medication, at which point he would refuse, become

agitated, and be returned to the state hospital, occasionally after a violent outburst.

During the initial visits with the psychiatrist on the team, the psychiatrist decides to seldom mention medications at all. Instead, he does everything he can to learn about Jim's interests and current concerns. He also chooses not to wage a battle over whether or not Jim has schizophrenia, instead commenting calmly, "Well, we probably disagree about that, but you know people are entitled to their own opinions, and I respect yours." More importantly, over the months, he learns two things: 1) Jim strongly dislikes the sleep problems that occurred when he decompensates, and 2) Jim hates being hospitalized, especially at the state hospital. He states that "it makes me feel like I'm a caged animal."

After months of gentle engagement, the psychiatrist comments, "You know, Jim, over the months I think you've come to know that I'm a straight shooter, and I would never tell you something that I did not believe. Whether or not you have schizophrenia, I believe that your medication is helping you. I'm convinced it helps you with your sleep, and even more importantly, I am absolutely convinced it keeps you out of the hospital. In fact, if your sleep gets bad again and you feel a little agitated because of it, I truly believe if we increase the medication a bit, there is a very good chance that we will be able to keep you out of the hospital. I know that is what you want, and it is what I want—to keep you out of the hospital."

Within a matter of months, Jim's schizophrenia begins to "break through" his current antipsychotic dose. When the psychiatrist suggests raising the dose, Jim begins to get agitated, but when reminded that the goal is to help with his sleep (which Jim openly admits has become a problem again) and to keep him out of the hospital, he relents and reluctantly agrees to take the increased dose. Throughout his interaction with the team, Jim never returned to the hospital despite several episodes requiring an increase in the dose of his intramuscular antipsychotic. Jim never fully believed that he had schizophrenia, but he did independently arrive at the conclusion that there was something wrong for which he wanted help (poor sleep and unwanted hospitalizations). Step 1 of the Choice Triad was effectively achieved. Note that the clinician's skilled interviewing also achieved step 2, in that Jim was motivated to use the antipsychotic because he believed it might bring relief for his self-identified problems.

Why Patients with Schizophrenia, Who Want to Take Their Medications, Find It Hard to Do So: Problems with Medication Follow-Through

In the medication interest model, behaviors such as taking medications are best understood as the product or interaction between internal factors (directly related to a patient's personal choice) such as beliefs, motivation, self-efficacy, and perceptions of coercion, and external situational factors (unrelated to or indirectly impacting upon the patient's choice) such as family and social supports, access to medications, confounding factors related to the use of medications including side effects and dosing schedules, and influences from the patient's culture, society, and media biases. Any one or combination of these situational external factors can thwart the best intentions of even the most motivated patients to follow through with taking medications.

Family and Social Support

Humans are by nature social creatures, drawn to others and shaped by their attitudes and behaviors. For this reason alone, it should be no surprise that social support, or the lack thereof, plays an important role in the ability of patients to follow through on taking medication as prescribed. Because of the high level of contact patients with schizophrenia often have with their relatives, with many patients continuing to live at home or returning home after a first episode of psychosis, family supports are especially critical to medication follow-through. **Table 2** lists reasons that relatives may fail to support a loved one's interest in using medication or actively discourage them from using medication.

Table 2. Reasons Relatives May Fail to Support a Patient's Interest in Using Medication

- They don't understand the role of medication in reducing symptoms and preventing relapses in schizophrenia
- They have misconceptions about antipsychotic medications, such as perceiving the drugs as being addictive or a crutch
- They possess negative attitudes about medications in general, or specifically about psychotropic medications
- They are unaware that their family member has schizophrenia, and hope that he or she will just "snap out of it"
- They are trying to avoid reminders that their family member has a serious mental illness or are in outright denial of the illness
- They are pinning their hopes on alternative, unproven miracle cures

Lack of understanding of the nature of schizophrenia and the principles of its treatment can, unfortunately, leave family members in the dark, groping for answers that are often difficult to extract from mental health professionals. The net result is a lack of appreciation for the role of medication in helping patients achieve their goals and unnecessary suffering among concerned family members. Specific roadblocks for family members to the understanding of the nature of schizophrenia and antipsychotics have been nicely delineated.³⁹ As one would expect, family involvement and support in the patient's treatment is an important predictor of adherence to medication.^{40,41}

Just as nuclear family support can facilitate or cause problems with follow-through on taking medications, other types of social support ranging from extended family members, neighbors, friends, and other con-

Research has supported the common-sense notion that a lack of social support is associated with poor follow-through on patients' taking of medication.

sumers can impact positively or negatively on follow-through. As with nuclear family members, these other sources of support or disapproval may be under the sway of negative attitudes, inaccurate beliefs, and insufficient knowledge about both schizophrenia and medications. If these misconceptions are transmitted to patients, they may indirectly affect their interest in taking medications or even directly result in impediments to patient follow-through, such as a friend who is "not on board" with the use of medications and fails to show up to provide a promised ride to the community mental health center or pharmacy. Research has supported the common-sense notion that a lack of social support is associated with poor follow-through on patients' taking of medication.^{42,43}

Problems with Access to Medications

The more convenient it is to engage in a desired behavior, and the less costly, the more likely someone will follow through. People with schizophrenia may face a variety of barriers to accessing the medications that they are interested in taking. While the cost of medication is not an issue for some clients and families, for others it is a problematic factor that can interfere

with filling prescriptions and/or taking medications at the prescribed dosage and frequency.⁴³ Lack of medical insurance can create a completely prohibitive financial burden, while even modest insurance co-payments for medication can pose a hardship for patients who may need to halve doses or cut back on the frequency of doses to save money.

A less obvious problem with access, easily overlooked yet none-the-less quite important, is brought to the situation by the disease process itself—impediments to medication follow-through caused by the negative symptoms of schizophrenia, such as lowered energy and reduced drive. These symptoms can result in a considerably greater effort needed to get to the pharmacy, to travel to case-management meetings, and to literally "get out of bed" in order to take the medications at the prescribed time.

Pharmacy access is not limited to problems associated with negative symptoms. Other practical considerations include the distance the patient (or family) must travel to fill prescriptions, availability and convenience of transportation to the pharmacy, and the frequency at which prescriptions must be refilled.⁴⁴ All of these transportation problems may worsen during inclement weather resulting in "unexplained" drop-offs in patient follow-through during winter months or when a family member (who provides transportation) leaves the area or even dies, as may occur with the parents of middle-aged patients with schizophrenia.

Medication-related Factors

Patients' internal perceptions about the problems caused by the side effects of their antipsychotics often play a determining role in how they weigh the pros and cons during the third step of the Choice Triad. However, other aspects of prescribed medication regimens may act more as external situational factors, which are equally important to internal factors and can influence the patient's effective medication follow-through.

The most important of these external factors is the complexity of the medication regimen. Complexity is reflected by a combination of factors, including the number of different medications prescribed, the number of times medication needs to be taken each day, and the total daily number of pills. The greater the complexity of the medication regimen, the lower the adherence.⁴⁵

Treatment regimen complexity is magnified by two additional challenges in patients with schizophrenia:

First, there has been a trend in recent years towards increased polypharmacy in the treatment of this mental illness, with many patients on multiple classes of psychotropic medications and even multiple medications within each class.⁴⁶ Compounding this problem is the high rate of medical comorbidity in people with schizophrenia, with high rates of diseases such as diabetes,

Many patients face a daunting task in terms of coordinating and properly taking numerous medications on a daily basis.

cardiovascular disease, and hypertension, which are typically treated with additional medications.⁴⁷ The net result of polypharmacy and medical comorbidity is that many patients face a daunting task in terms of coordinating and properly taking numerous medications on a daily basis.

A second magnifying process, akin to the cognitive problems seen with follow-through in patients suffering from dementia, is the easily overlooked cognitive deficits sometimes seen in schizophrenia, including difficulties in memory and executive functions such as planning.⁴⁸ Even subtly impaired cognitive functioning can impede the ability of patients to follow through if it has not been detected by the treatment team. These cognitive deficits can compound the effects of the complexity of the medication regimens themselves, and have been shown to make adherence more difficult for even the most motivated patient with schizophrenia.⁴³

Cultural, Societal, and Media Influences

Just as the patient's immediate social support can influence follow-through, so can a broader range of factors operating at the societal and cultural levels, often propagated by media. There is a strong social stigma associated with mental illness in general, accompanied by general public beliefs that do not favor the use of medication as a preferred treatment option.^{49,50}

While the stigma of schizophrenia may contribute to denial of the illness (or the presence of any problems at all), another external factor—societal disapproval of psychotropic medications—may pressure patients to conceal from others the fact that they take medications. Such patients may fail to reap the benefits of social support from which people with a chronic medical condition can benefit as they struggle with their disease processes.

Specific cultural or subcultural beliefs may provide alternative interpretations of mental illness that are not compatible with medical explanations, making it more difficult for patients to take medication because others construe their symptoms in a benign or even favorable light. For example, *espiritismo* in Puerto Rican culture is a system of beliefs involving the interactions between the invisible spirit world and the visible world in which spirits can attach themselves to persons.⁵¹ Spirits are hierarchically ordered in terms of their moral perfection, and the practice of *espiritismo* is guided by helping individuals who are spiritually ill achieve higher levels of this perfection. Troubled persons are not identified as “sick,” nor are they blamed for their difficulties; in some cases, symptoms such as hallucinations may be interpreted favorably as signs that the person is advanced in his or her spiritual development, resulting in some prestige.⁵²

In addition to broad societal biases, specific organizations may disapprove of the use of medications for psychiatric disorders or endorse alternative treatment methods. For example, when recommending patients with schizophrenia and a co-occurring substance use disorder to Alcoholics Anonymous (AA), it is often wise to see “what the current philosophy” of the local group is, for some members of AA believe that the use of any psychotropic medication is a form of addiction and should be avoided by anyone who endorses the goal of living a sober life.⁵³ Likewise, the Church of Scientology strongly advocates against the use of medication for psychiatric disorders, and this organization has been known to ostracize and discourage people who want to take medications.⁵⁴

Aside from specific religious or cult-like organizations that propagate inaccurate information and negative attitudes about medication, common media sources such as books,⁵⁵ magazines, movies, and websites may also contribute such misinformation. Furthermore, the false promotion of miracle cures for a wide range of psychiatric disorders may distract people from following through on their plans to take medication in the hopes of a faster cure.⁵⁶ As information becomes increasingly available to the general public at faster and faster rates, the challenge of sorting out fact from fiction accelerates, often leaving patients wondering about whom they should believe and reducing their intention to take their medications as prescribed.

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Counseling Points™

Prevalence, Ramifications, and Implications of Nonadherence and “Why It Happens” in the Treatment of Schizophrenia

- Nonadherence to prescribed medications is a significant hurdle in helping patients recover from schizophrenia.
- The medication interest model has been evolving for 20 years and advocates working collaboratively with patients so that each patient's personal interest in choosing and staying on a medication is maximized.
- The medication interest model replaces oppositional, negative, or neutral terms such as compliance, adherence, and persistency with the empowering and positive concept of "medication interest."
- Patients who discontinue medication or have inadequate interest in or use of medication are at enormous risk for relapse, rehospitalization, suicidality, deterioration in psychosocial and vocation function, family burden and conflict, and increased health care costs.
- Patients refuse medications or discontinue them for many reasons, but one of the major reasons is patient choice not to take them.
- The Choice Triad , which is part of the medication interest model, consists of three steps:
 - Step 1)** Patients think that there is something wrong with them for which they personally want relief.
 - Step 2)** They are motivated to try a medication because they believe that the medication has the potential to help bring them this relief (or perhaps prevent a serious future problem as with an antihypertensive agent or a vaccine).
 - Step 3)** They personally believe that the pros of taking the medication outweigh the cons.
- According to the model, most people won't reliably take medications unless they believe all three components of the Choice Triad.
- The art of enhancing the patient's interest in taking any given medication lies in the ability of the clinician, through the skilled use of behaviorally defined interviewing techniques, to uncover the beliefs of the patient on each of the three components of the Choice Triad, while nurturing a powerful therapeutic alliance.
- People with schizophrenia may face a variety of barriers to use of the medications they are interested in taking, including lack of family support, prohibitive costs, medication side effects, and management of complex treatment regimens.
- Cultural and societal beliefs, as well as media influences, may also discourage use of medication to treat schizophrenia.

Counseling Points™

Prevalence, Ramifications, and Implications of Nonadherence and “Why It Happens” in the Treatment of Schizophrenia

Continuing Education Posttest

Please complete the posttest form on the next page by selecting the best answer to each question below. Also complete the evaluation questions and fax the entire page to Postgraduate Institute for Medicine at (303) 790-4876.

- 1. Situational roadblocks to medication follow-through include which of the following?**
 - A) Remembering to take medications
 - B) The cost of medications
 - C) Interpersonal and cultural pressures to stop medications
 - D) All of the above
- 2. Adherence rates tend to be higher among patients with chronic conditions in comparison to those with acute conditions.**
 - A) True
 - B) False
- 3. In a study by Cooper et al of over 6,000 subjects treated with antipsychotics, what percentage were found to be persistent with medication use 1 year after their first prescription?**
 - A) 46%
 - B) 55%
 - C) 68%
 - D) 73%
- 4. Robinson et al found that the single most powerful predictor of relapse in a large cohort of patients who had been successfully treated for a first episode of schizophrenia was:**
 - A) being prescribed more than one medication
 - B) discontinuing medication
 - C) being switched to a different medication
 - D) receiving an oral versus an injectable medication
- 5. Gaps in medication-taking as short as 10 days can _____ the risk of hospitalization.**
 - A) double
 - B) triple
 - C) quadruple
 - D) quintuple
- 6. Which of the following is NOT a step in the Choice Triad?**
 - A) Patients think that there is something wrong with them for which they personally want relief
 - B) Patients know someone else with the illness who has been treated with medication
 - C) Patients are motivated to try a medication because they believe that the medication has the potential to help bring them relief
 - D) Patients personally believe that the pros of taking the medication outweigh the cons
- 7. In the medication interest model, the following is true:**
 - A) terms such as medication noncompliance and medication nonadherence are essentially not used by clinicians when discussing patients
 - B) the principles of the model only apply to psychiatric medications
 - C) it is critical that the patient completely agrees that he or she has schizophrenia
 - D) all of the above
- 8. According to the medication interest model, by developing a therapeutic alliance, beliefs that might logically block a patient's interest in medication use can often be:**
 - A) gently transformed
 - B) overridden
 - C) proven false
- 9. Family members may fail to support a loved one's interest in using medications because:**
 - A) they have misconceptions about antipsychotic agents
 - B) they possess negative attitudes about medications in general
 - C) they are unaware that their family member has schizophrenia
 - D) all of the above
- 10. Which of the following commonly seen problems associated with schizophrenia may impair medication follow-through?**
 - A) Negative symptoms such as anergia
 - B) Cognitive executive function deficits
 - C) Delirium
 - D) Both A and B

EVALUATION FORM

Counseling Points™: Prevalence, Ramifications, and Implications of Nonadherence and "Why It Happens" in the Treatment of Schizophrenia

Project ID: 5533E538

To assist us in evaluating the effectiveness of this activity and to make recommendations for future educational offerings, please take a few minutes to complete this evaluation form. *You must complete this evaluation form to receive acknowledgment for completing this activity.*

1 = Strongly Disagree 2 = Disagree 3 = Somewhat Disagree 4 = Somewhat Agree 5 = Agree 6 = Strongly Agree

To what extent do you agree with the following statements? (Please circle the appropriate number on the scale.)

1. In patients with schizophrenia, a gap in taking medication as short as 10 days has been shown to double the risk of hospitalization. 1 2 3 4 5 6
2. Most patients will not reliably take medication for any condition unless all three of the following apply: they think there is something wrong with them for which they personally want relief, they believe the medication has the potential to help bring the relief, and they believe the pros of taking the medication outweigh the cons. 1 2 3 4 5 6
3. Subtle cognitive impairments sometimes seen in schizophrenia can make adherence to the complex polypharmacy medication routines now common in treatment more difficult for even the most motivated patient. 1 2 3 4 5 6
4. Both clinicians and patients significantly overestimate the degree to which patients are genuinely interested in taking their medication and/or their ability to do so. 1 2 3 4 5 6
5. When discussing whether or not patients take medications as prescribed, the terms compliance, adherence, and persistency should be abandoned, except in the context of reporting clinical research, in favor of the empowering concept of medication interest. 1 2 3 4 5 6

To what extent do you agree with the following statements? (Please circle the appropriate number on the scale.)

Extent to Which Program Activities Met the Identified Objectives

After completing this activity, I am now better able to:

- Identify the prevalence of nonadherence to prescribed medications for schizophrenia 1 2 3 4 5 6
- Outline the impact of low interest in medication and poor follow-through on taking medication on such issues as the course of illness, functional outcomes, relapse, mortality, and effect on family members 1 2 3 4 5 6
- Discuss the choice-related reasons for nonadherence that lead patients with schizophrenia to not want to take medications 1 2 3 4 5 6
- Discuss the situational barriers to adherence that make it difficult for patients who choose to take their medications to take them as prescribed 1 2 3 4 5 6

Overall Effectiveness of the Activity

The content presented:

- Was timely and will influence how I practice 1 2 3 4 5 6
- Enhanced my current knowledge base 1 2 3 4 5 6
- Addressed my most pressing questions 1 2 3 4 5 6
- Provided new ideas or information I expect to use 1 2 3 4 5 6
- Addressed competencies identified by my specialty 1 2 3 4 5 6
- Avoided commercial bias or influence 1 2 3 4 5 6

Impact of the Activity

Name one thing you intend to change in your practice as a result of completing this activity: _____

Please list any topics you would like to see addressed in future educational activities: _____

Additional comments about this activity: _____

Follow-up

As part of our continuous quality improvement effort, we conduct postactivity follow-up surveys to assess the impact of our educational interventions on professional practice. Please indicate if you would be willing to participate in such a survey:

- Yes, I would be interested in participating in a follow-up survey.
 No, I would not be interested in participating in a follow-up survey.

If you wish to receive acknowledgment for completing for this activity, please complete the posttest by selecting the best answer to each question, complete this evaluation verification of participation, and fax to: (303) 790-4876.

Posttest Answer Key	1	2	3	4	5	6	7	8	9	10

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For Physicians Only

I certify my actual time spent to complete this educational activity to be:

- I participated in the entire activity and claim 1 credit.
 I participated in only part of the activity and claim _____ credits.

Fax form to (303) 790-4876

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