Insight in Severe Mental Illness: Implications for Treatment Decisions

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This article reviews recent research related to impaired insight in schizophrenia and its consequences for cognitive, behavioral, legal, and treatment compliance issues affecting this population. It discusses efforts to find the neurobiological basis for lack of insight and the various structures or circuits of the brain that have been implicated. In the search for a more reliable and valid measure of insight for treatment decisions, the development of various assessment instruments is summarized. Impaired insight is shown to be related to a poorer course of the illness and noncompliance with necessary treatment. The implications of these findings for treatment decisions, legal interventions, and ongoing treatment monitoring are discussed.

As obstacles to involuntary treatment for serious mental illness have increased over the years, so have the number of dishevelled, mentally ill, homeless people on our streets (estimated as more than 150,000 nationwide) and the number of incarcerated people with mental illness in our jails and prisons (estimated as more than 20,000 in California alone).[1,2] When deinstitutionalization led to the accelerated closing of state hospitals, beginning in the late 1950s, it was anticipated that these patients would be better treated in their own communities, using the new neuroleptics. This expectation failed to consider either the nature of the illnesses or the limitations of the available treatments. It is estimated that 92 percent of those who once would have been protected and treated in state hospitals now live in the community and 40 percent are receiving no treatment at all.[1]

One of the difficulties in providing continuous voluntary treatment in the community for persons with serious mental illnesses such as schizophrenia and bipolar disorder is that these illnesses are brain disorders that affect the ill person's reasoning, and consequently these indi-

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viduals often do not believe that they are ill or that the symptoms of their illnesses will respond to medication. Therefore, they do not seek treatment or, if coerced into treatment when hospitalized, they are unable or unwilling to continue to adhere to the treatment regimen after discharge and will again relapse and require hospitalization.

> A millionaire in a northern California city, who was diagnosed as having manic-depressive illness, stopped taking his prescribed lithium. As he became more manic, he picked up a homeless mentally ill man on the streets, promising the man and others "free homes for the homeless." The two men broke into a nearby estate after ramming the millionaire's $50,000 van through the front gate and entering through an unlocked door. They were both arrested when the homeowner found the pair preparing a breakfast of bacon and eggs in her kitchen.*

Laws have been designed to protect the rights of the individual to refuse treatment, and involuntary treatment decisions have been fought in the courts by a legal community that has valued individual freedom over protection and *parens patriae*.[2] This insistence on individual freedom assumes that adult individuals know when they are in need of treatment and have the ability to give informed consent and choose the treatments that will help them. The person's capacity to make those choices requires insight about the illness and an understanding of the treatments shown to reduce the symptoms. Although the community understands that a demented person with Alzheimer's disease lacks the capacity to make such choices, and readily allows the physician to decide on treatment, society often fails to comprehend the similar chronic incapacity of many individuals with severe mental illness.

One reason for this difference may be the stigma and misunderstanding associated with serious mental illnesses such as schizophrenia, which have resulted in stronger legal battles on behalf of those with schizophrenia to maintain their right to refuse treatment than defense of their rights to receive appropriate treatment. This distinction may also occur because different aspects of capacity are impaired in schizophrenia and in Alzheimer's disease. Despite cognitive deficits that affect complex information processing, many individuals with schizophrenia may appear superficially oriented and attentive, readily able to recognize familiar objects and persons, and able to communicate without obvious confusion—all aspects of mental capacity. Some states have separate proceedings and laws for these two types of brain disorders, with greater obstacles to treatment for mental illness.

This article reviews some of the recent professional efforts to understand the neurological basis of lack of insight in people with schizophrenia, to define and measure insight in people at different stages of schizophrenia, and to relate the person's lack of insight to problems in clinical decision-making needed for patient treatment and protection.

Insight Defined

Insight is generally defined as an abstract concept that involves a clear grasp or understanding of meaningful relation-

* Examples are from numerous personal communications from families in crisis and from members of the Criminal Justice Advisory Committee of the California Alliance for the Mentally Ill.

ships within a situation. When used in the context of severe psychiatric disorders such as schizophrenia, it relates to the individual's understanding of his or her illness or the motivation underlying the individual's own behavior.[3,4] Insight is considered by many mental health professionals to be a multidimensional construct that includes three major components[4]: (1) awareness of having an illness; (2) attribution of one's symptoms to the illness; and (3) acknowledgment of a need for treatment. To be fully insightful, one would need to have a clear, logical, and integrative intelligence, with full use of cognitive functions and without the distortions of thinking that a disturbed mood or defensiveness might create. Since deficits in any of these factors may attenuate insight, insight is best seen as varying along a continuum rather than being dichotomous (present/absent), as well as existing to different degrees in each of the three components.

Among the patients with major mental illnesses for whom involuntary treatment decisions are often required because they lack insight about their illness, the two diagnoses most frequently encountered are schizophrenia and bipolar affective disorder. Both are well documented as being brain disorders with a neurobiological basis, both may be expressed in severe psychotic episodes that impair the ability to accurately perceive and interpret reality, and both are treatable illnesses, at least partly responsive to available medications.[3,5,6] Both involve changes in brain functioning or structure that can often (but not always) be demonstrated by new imaging technology, such as positron emission tomography, which can present pictures of the working brain. Less directly, neuropsychological testing demonstrates reduced mental ability on tasks designed to measure activity in specific areas of the human brain.[7] Consistently, among the common symptoms seen in different forms of schizophrenia are a variety of impaired mental functions that are assumed to contribute to impaired insight. Both of the above methods have illustrated the reduced mental activity in the frontal lobes of the brain, especially for unmedicated individuals with schizophrenia.

Because schizophrenic disorders are seen as predominantly thought disorders, an abundance of research has focused on the cognitive deficits of patients with schizophrenia. This article focuses primarily on insight in schizophrenia, with some references to differences in the impairments seen in bipolar disorder. There are two difficulties inherent in this approach. First, the diagnoses of schizophrenia and bipolar disorder are by necessity sometimes based only on the patient's presenting symptoms, without adequate history or family information to show the pattern of the illness. Because of the presence of many common symptoms in the two disorders, especially during periods of psychosis, and the lack of an objective diagnostic test, patients often receive both diagnoses at different times and from different clinicians throughout their treatment. A second problem is that the studies referenced herein did not always clearly separate diagnostic categories in presenting their results.

Neurobiological Basis of Impaired Insight in Schizophrenia

Some attempts to understand the possible neuropsychological basis of lack of insight in schizophrenia have compared this deficit with similar impairments seen in other neurological disorders, such as those occurring after brain injury and resulting in "anosognosia," in which the patient is unaware of and denies symptoms, disease, or physical deficit.[3,4] For example, a patient with hemiplegia after a stroke may deny the paralysis and insist that he or she can walk normally. Researchers variously attribute that deficit to either diffuse brain damage or to focal brain lesions in the right hemisphere that result in a lack of knowledge of disease and an inability to be self-monitoring or to self-correct.[3,4] McEvoy and colleagues[8] related awareness of mental illness and social judgment to neuropsychological tests showing decreased functioning of the prefrontal lobes and the right and left parietal lobes of the brain.

Other researchers have proposed that the basal ganglia, structures of the inner brain, may be centrally involved in the dysfunctional neural circuits found in schizophrenia. These structures are believed to be involved in "habit learning" and may build up cognitive patterns for the development of self-awareness (identity), may influence one's perception of reality, may result in abnormal cognitive experiences and, through inability to sort out reality from hallucinations, may lead to an inability to separate self from others.[9] This theory is intriguing, because many psychotic individuals become extremely confused about their own identity and may have delusions that they are the devil, or the savior of the world, or some other important or bizarre being. Torrey[1] summarizes an example taken from the *Washington Post*:

> A highly publicized death arising from impaired thinking was that of Margaret King, a 36-year-old homeless woman who was found dead in the outdoor lion exhibit at the National Zoo, Washington, D.C. Ms. King suffered from schizophrenia and was said to believe that "she has a special relationship with God, either she is Jesus Christ or the sister of Jesus Christ, and that she receives direct messages from God."

She was mauled to death by the lions when she tried to enter their enclosure.

A recent issue of the *Schizophrenia Bulletin*[10] reviews research on many aspects of brain functioning, reminding us that the search for a primary pathophysiological site of schizophrenia is complicated by both the heterogeneity of the illness and the fact that areas of proposed dysfunction are part of multiple neural circuits rather than isolated brain regions; therefore, damage in one area may affect other distant areas. There are certain repeated findings in major research efforts, however. Many studies show that up to 50 percent of patients with schizophrenia have abnormally small hippocampi, a part of the limbic system that one researcher describes as critical to the expression of paranoid schizophrenia.[11] Other studies show that 15 to 30 percent of patients have enlarged ventricles, fluid-filled spaces that become enlarged with the loss of brain tissue. Yet there is no agreement about the structures that have been reduced to result in enlarged ventricles. It

has also been proposed that a disturbance in communication between the hippocampus and the cerebral cortex that compares past and current experience could produce cognitive impairment, misconception of reality, or distorted connections between affect and action or thought content.[12] The individual with schizophrenia thus cannot analyze and recognize environmental contexts for making appropriate decisions.

Because only a minority of people with schizophrenia have brains that differ structurally in any one specific way from individuals who do not have the illness, the importance of abnormalities in neurotransmission pathways or communication between brain structures has received more research attention. Most studies find reduced metabolism in the frontal lobes of those with a schizophrenic illness to be an indication of reduced brain activity. Such a deficit would result in impairment in the functions of executive planning, problem solving, judgment, working memory, and impulse control, all of which are associated with the frontal cortex. However, no specific abnormality has been identified that is either necessary or sufficient for the diagnosis of schizophrenia, and we are reminded that we are probably dealing with multiple disorders, with different groups of primary dysfunctions influencing frontal lobe activity and resulting in different clusters of cognitive, emotional, and behavioral deficits. Among these deficits for many patients is an inability to understand that these changes are caused by a treatable brain disorder.

In a discussion of brain function in schizophrenia, Gur and colleagues[7] summarize the research that has linked behavior to brain disease and neurophysiologic functioning. This linkage has been accomplished through both neuropsychological testing and the use of new neuroimaging technology that maps the results of "activation" procedures that monitor brain activity during specific behaviors.[7, 13] It is generally agreed that lesions or dysfunctions that affect the frontal brain system ("executive" deficits) can disrupt most higher-level cognitive operations by causing a disorganization of goal-directed behavior, deficits in attentional processing, and a loss of abstraction and conceptual flexibility.[13] Imaging techniques have generally demonstrated less activation of the frontal lobes when a person with a schizophrenic disorder is solving abstract problems than occurs for a normal individual. Lesions of the temporal lobe, particularly of the medial temporal lobe region (including the hippocampus and amygdala), have been associated with deficits in memory and in the ability to learn new information.[7]

Neuropsychological testing batteries have shown that patients with schizophrenia perform poorly on complex cognitive and perceptual tests that place high demands on information processing, maintenance of attention, and rapid reaction time or psychomotor speed.[7] Gur and colleagues concluded that deficits exist both in abstraction and in memory for persons with schizophrenia, but that the impairments in memory and learning are shown to be significantly greater than the impairments in abstraction. They believe that this suggests a selective temporal lobe deficit in schizophrenia, one that is likely

to involve neurotransmitter systems with effects throughout the areas of the brain served by those systems. They found this impairment in both males and females with schizophrenia, across age ranges, for all educational levels, and in both cooperative and less cooperative patients. These authors suggest that the "activation paradigm," which measures brain activity during the performance of specific tasks, may be an important and appropriate model for future research in understanding schizophrenia.

Not all research supports a neuropsychological basis for lack of insight in schizophrenia, however, and failures to find a correlation between performance on components of neuropsychological test batteries and lack of insight have been explained as indicating that lack of insight could be a primary symptom resulting directly from the schizophrenic process.[14] Because much recent research has shown such a correlation, those negative results may be related to the research design or the measures used.

Consequences of Impaired Insight

Although cognitive deficits in those with schizophrenia may vary in both their intensity and pattern throughout the course of the illness and may be different in two individuals with the same diagnosis, some impairments invariably occur in a person's ability to think in a clear, logical, and organized manner. When ill, patients with schizophrenia are unable to screen out irrelevant information and integrate relevant information needed to make decisions, to utilize cognitive flexibility and forward planning in decision-making, to interpret their world with relative accuracy, and to learn from past experience. For some persons, these deficits occur primarily during a period of decompensation and relapse. However, for many people with mental illnesses such as schizophrenia, the deficits exist to some degree even when stabilized on medication.[3, 4, 7] These deficits will inevitably impact their *insight* and ability to make logical and constructive decisions, and this viewpoint has been widely supported by clinical experience as well as research.[3, 4, 6, 7, 11, 13] Indeed, some researchers believe that lack of insight is a deficit that is relevant to the diagnosis of schizophrenia.[4]

A major dilemma exists, therefore, in the expectation that individuals who suffer from a disorder that results in lack of insight must depend upon that insight to make reasonable decisions about their need for treatment, often when they are most ill. All too often the treatment chosen is *no treatment*, until the person has become an immediate danger to self or others. In the interim, the individual may suffer further brain deterioration, serious health problems, victimization, or incarceration.

> A 56-year-old man with paranoid schizophrenia, a graduate of an Ivy League university, has spent the past 20 years wandering the country, often sleeping in public shelters or in the woods. He believes the FBI implanted microchips in his brain and that these broadcast voices in his head. His family has tried on several occasions to get him involuntarily committed to a hospital for treatment, but in court the man is calm, articulate, and able to convince the judge that he has the right to live his alternate lifestyle.[1]

Although individuals similar to the man described above are dangerous only to themselves, those whose delusions

make them a danger to others are well illustrated by the widely publicized case of Theodore Kaczynski. Known as the Unabomber, Kaczynski admitted to 11 bombings across the country over an 18-year period, killing three people and injuring several others before his arrest.[15, 16] Although Kaczynski was diagnosed as having paranoid schizophrenia only at the time of his trial, his family had also tried unsuccessfully to obtain mental health treatment for him many years previously when he withdrew to his primitive cabin in the woods of Montana. His 35,000-word "Manifesto," written over the years, is interwoven with his delusion that the machines of technology will reduce the human race to servitude (Ref. 16, ¶ 166). He describes his efforts to stop the force of a perceived threat of modern technology with his violent attacks on those associated with technology, writing: "The Industrial Revolution and its consequences have been a disaster for the human race (¶ 1)." He states that his devastating attacks thus were "producing good results" when they struck their targets and might then create the instability of industrial society that was needed for a technological revolution.[16]

> . . .[T]he two main tasks for the present are to promote social stress and instability in industrial society to develop and propagate an ideology that opposes technology and the industrial system. When the system becomes sufficiently stressed and unstable, a revolution against technology may be possible. (¶ 181)

He states in his manifesto: "In order to get our message before the public with some chance of making a lasting impression, we've had to kill people." (¶ 96).

The two examples given above demonstrate the consequences of our current restrictions on involuntary treatment for those individuals with schizophrenia whose intelligence hides their lack of judgment and reason. The more intact cognitive processes often seen in paranoid schizophrenia, together with high intelligence, thus may assist those with this diagnosis in eluding both incarceration and their involuntary treatment and protection. The distortions in their cognitive processes also reflect a probable lack of insight. The behavior of the Unabomber described during his recent court procedures was that of a man resistant to any suggestion that he had a mental illness, even if this lack of insight would cost him his life. Only when a psychiatric evaluation was needed to prove he was competent to defend himself in court did Kaczynski agree to the examination that ultimately gave him the diagnosis of paranoid schizophrenia.[15] His "manifesto" includes many general references and denials of mental illness such as: "Instead of removing the conditions that make people depressed, modern society gives them antidepressant drugs. In effect, antidepressants are a means of modifying an individual's internal state in such a way as to enable him to tolerate social conditions that he would otherwise find intolerable" (Ref. 16, ¶ 145).

Frequency of Impaired Insight in Schizophrenia

Impaired insight is a very common symptom of schizophrenia. In reviewing two large multinational studies on the major symptoms of schizophrenia, research-

ers found that lack of insight was the most frequently present symptom of schizophrenia, occurring in 89 percent of patients in one study and in 81 percent of patients in the second study.[4] These high percentages may not be representative of all schizophrenia patients, because these were described as chronic hospitalized patients with schizophrenia, and the statistics are impaired by methods that depended upon disagreement with the clinicians' diagnosis for determination of "lack of insight": that is, "denial of illness" is equated with impaired insight.

More recent efforts have used a variety of assessment instruments to provide increasingly valid measures of insight. Using the Scale to Assess Unawareness of Mental Disorder (SUMD) developed to measure insight, Amador and colleagues[17, 18] assessed 412 inpatients diagnosed with schizophrenia and report that 57.4 percent of these patients demonstrated a moderate to severe lack of awareness of having a mental disorder; 31.5 percent had a severe unawareness of the social consequences of mental disorder; and 21.7 percent had a severe unawareness of the efficacy of medication. McEvoy and colleagues[8] related insight to common sense, as measured by the Social Knowledge Questionnaire (SKQ), and to both neurological measures and the Insight and Treatment Attitudes Questionnaire (ITAQ) at time of hospital discharge for 32 patients with schizophrenic disorders. They found that only ITAQ items that reflected acknowledgment of illness correlated with the neuropsychological measures. The authors reported only a weak relationship between the SKQ results and the severity of patients' psychopathology in this study,[8] although such a relationship was seen between the ITAQ and severity of illness in their earlier study.[19] In addition, their earlier research indicated that the clients did not gain insight from the learning opportunities of repeated hospitalizations and that deficits in insight either remained stable or worsened during exacerbations of psychosis. MacPherson and colleagues[20] also found that impaired insight was a frequent deficit in schizophrenia and reported that 74 percent of long-term schizophrenic patients believed that their treatment was unnecessary because they were not psychiatrically ill.

The studies described above looked only at long-term hospitalized schizophrenic inpatients. However, it is apparent that impaired insight persists to a large extent even for those treated outpatients who are able to function with stability in a community setting. In a study of outpatients described as "persons with serious mental illness" (of whom at least 38% had a diagnosis of schizophrenia), Coursey and colleagues[21] found that only eight percent of randomly selected patients in psychosocial rehabilitation centers believed that they had a brain disorder, and only 25 percent believed their illness was caused by a combination of psychological problems and a brain disease, although 60 percent believed a combination of medication and talking therapy was helpful. The authors expressed the concern that a majority of these outpatients failed to understand the biological basis for their illness, which may deprive them of a foundation for therapy

and framing therapeutic issues. In more recent research, Dickerson and colleagues[22] surveyed 87 stable outpatients with schizophrenia, using a multi-item assessment scale, and found that insight about their illness was at least moderately impaired for 49.5 percent of the patients and severely impaired for 25 percent. This lack of insight was predicted by the severity of their delusions, their difficulty with abstract thinking, their lack of social activities, and a reported lack of anxiety.

Assessment of Insight

Because several studies have shown a positive relationship between insight and both treatment compliance and outcome, consistent and valid measures are needed to help clinicians assess insight and make more appropriate treatment decisions. As described above, insight has been assessed through a variety of brief scales based on semistructured interviews that allow the clinician to rate different aspects of insight on a continuum, including the SUMD, the ITAQ, the SKQ and other brief questionnaires.[8, 17–19, 22, 28] These approaches have provided more valid and reliable assessments of the individual's insight and ability to comply with treatment recommendations, as well as a means to correlate these measures with both neuropsychological measures and outcome variables. However, no one instrument has been used and validated across settings to accumulate a large body of outcome information to aid in treatment decisions.

Another approach to assessing insight has used patients' ratings of how similar their symptoms were to those in vignettes describing patients with classic symptoms of schizophrenia and bipolar disorder.[23–25] The results revealed that at time of hospitalization, in contrast to the ratings of their clinicians and unlike those with bipolar disorder, patients with schizophrenia showed less awareness of their positive symptoms of mental illness such as conceptual disorganization. Even when admitting to symptoms such as hallucinations, anhedonia, or asociality, they denied that these were symptoms of mental illness, showing deficits in insight that were related to their ratings on the ITAQ. At discharge, patients with schizophrenia rated themselves as more like the manic characteristics in the mania vignettes, but denied the pathology of the symptoms. Both groups of patients who admitted to hallucinations and suspiciousness denied that these were symptoms of mental illness, both at hospitalization and at discharge.[23, 24] The recent study by Startup,[25] in contrast, suggested that patients with schizophrenia who had poor insight were able to recognize the psychotic symptoms in *others* as being related to mental illness, but were unable to identify the symptoms as indicative of their own mental illness.

The neurological deficit that contributes to their impaired insight may also contribute to the inability of patients with schizophrenia to give valid assessments of their quality of life. Although most clinicians may routinely accept the patients' evaluations of their life circumstances, one recent study found that, in contrast to patients with mood disorders, those with schizophrenia reported significantly higher self-rating scores on the

Quality of Life Index, despite objective ratings of their more aversive life circumstances, than the two groups with affective disorders.[26] The inability of the noninsightful patients to accurately evaluate their living conditions further supports a need for objective monitoring and case management for those with schizophrenia, to assess their treatment progress, their insight, and any life circumstances that might contribute to their relapse and deterioration.

Relationship of Insight to Treatment Outcome

With few exceptions, the majority of studies indicate that insight is negatively correlated with illness severity and chronicity; that is, the more severe and enduring one's illness is, the less insight one has about that illness.[27–31] Schizophrenic patients with good insight showed greater improvement after long-term hospitalization; those with poor insight were more frequently rehospitalized.[29] Since insight is associated with both better treatment compliance and improved outcome, either (1) compliance as demonstrated by consistent treatment may mediate a better course of the illness, or (2) the type of disorder that reduces the patient's capacity to have insight and compliance with treatment may be associated with a more severe or progressive type of illness. Both factors must be considered in treatment planning.

Kent and Yellowlees[30] analyzed contributing factors in the rehospitalization of 50 high utilizers of mental health services for whom diagnoses were not specified. Their analysis indicated that lack of insight and denial of illness were present in 62 percent of the hospital readmissions; and noncompliance with medication was cited as the cause of admission in 43 percent of these patients, supporting the need for assertive, continuous case management to avoid noncompliance as well as stressful social crises. Kasper and colleagues[27] examined the patient characteristics and treatment outcome of 348 patients who refused antipsychotic medication in a state where the physician has discretionary power to give treatment over the patient's objections. The authors concluded that these physicians acted to persuade or negotiate with patients to accept medication and promptly provided medication and treatment to those who needed but refused treatment in an average of 2.8 days after refusal. A follow-up study revealed that noncompliant patients who refused treatment had higher symptom scores on the Brief Psychiatric Rating Scale, were more assaultive, were more likely to require seclusion and restraint, had greater numbers of past psychiatric hospitalization, and were hospitalized for longer periods, all suggesting a worse prognosis.[27] Further, these researchers concluded that more serious mental illness is a *cause*, not a consequence, of refusal of inpatient treatment, and as such a physician discretion model would result in less disruptive and assaultive behavior as well as shorter hospital stays. Concurring with the conclusion that treatment refusal is a symptom of serious mental illness, Schwartz and colleagues[29] evaluated 24 involuntarily medicated patients at discharge, 17 of whom agreed after treatment that their treatment

refusal had been correctly overridden. These included patients with diagnoses of schizophrenia, atypical psychosis, and bipolar disorder. Noncompliers (those who continued to insist they did not have an illness or need treatment) had almost four times as many previous psychiatric hospitalizations as compliers (14.5 compared with 3.7). The majority of these noncompliers who disagreed with their commitment decision were described as extremely grandiose, noninsightful, displaying psychotic denial, and showing poor response to treatment.[29]

In a review of studies of medication adherence that assessed only those patients diagnosed as having schizophrenia, Fenton and colleagues[31] remind us that the mean noncompliance rate for long-term medical illnesses is only 54 percent and that the causes of noncompliance for those with schizophrenia are multiple, perhaps compounded by the cognitive symptoms of the illness. However, the studies did confirm that the relapse rate for those with schizophrenia who are noncompliant is 3.7 times greater than for those who are compliant with medication. Irregular compliance with medication was a significant predictor of relapse and was found in 38 to 68 percent of relapsed patients in six studies that they reviewed. Fenton *et al.* conclude that both inpatient medication refusal and outpatient noncompliance were associated with more severe psychopathology, particularly when grandiosity was present. Most studies found that poor insight was consistently associated with noncompliance, whether at admission, during hospitalization, at discharge, or postdischarge. Because of this consistent association, they conclude that the prevention and treatment of noncompliance *per se* are important in the care of patients diagnosed with schizophrenia.

There has been contradictory evidence that poor insight is a reversible symptom. One study indicates that insight may be somewhat improved with extremes of repetitive training and education, specifically education about one's illness. In contrast, other researchers have found that patients with severe forms of anosognosia, as well as patients with temporal lobe and deep-brain structural abnormalities, are impervious to even repeated attempts to demonstrate their symptoms and deficits.[4, 32] Unsuccessful efforts to relate this impaired insight to specific brain deficits may be due to different etiologies for the impairments or to the fact that lack of insight and judgment may be part of the "cognitive factor" in schizophrenic symptoms.[17] Research on a large sample of patients with Alzheimer's disease may be relevant here, because it demonstrated that decreased levels of insight correlated significantly with the severity of dementia on several measures and that the loss of insight progressed as the severity of the dementia increased, again suggesting a biological basis for the loss of insight.[33]

Consequences of Impaired Insight and Related Deficits

In addition to lack of insight, the impact that brain dysfunctions described above would have on the behaviors of persons suffering from schizophrenia are quite consistent with the widely noted symptoms of the illness, may compound

their environmental stressors, and may contribute to poor outcome. Patients may forget medications or appointments or may need considerable repetition and reinforcement to complete simple daily tasks. Attention, concentration, and thought processes are disrupted, interfering with the individual's ability to follow a conversation, complete a complex task, learn new and complicated skills, or solve everyday problems. Thus, if several steps are required to complete a task or solve a problem, the person is unable to sequentially complete the steps and may respond with the most primitive behaviors in his or her repertoire. For example, if the ill person's car breaks down on a highway, he or she may leave it unattended and hitchhike toward home. However, this person's inability to resolve the complex problem of fixing or retrieving the car may result in the car being towed away or left in a dangerous position when no action is taken, thereby compounding the problems and the stressors. A substantial proportion of those diagnosed with schizophrenia may be unable to make even simple constructive decisions, such as how to get to a doctor's appointment on time, how to prepare a balanced meal, how or why to select a fresh set of clothing. This indecision and inaction may be interpreted by the nonprofessional as "amotivational," when they are as likely to reflect an inability to cope with competing stimuli, integrate relevant information, and implement forward planning in even simple situations. It is easy to see how noninsightful patients, with such fragmented and disorganized information, can misinterpret or misidentify persons or situations. This fragmentation and disorganization may also result in an inability to select appropriate and effective responses for a situation, leading to impaired interpersonal relationships, inability to sustain work or educational efforts, and possible illegal or dangerous behaviors. Below is a tragic example.

> John (pseudonym) drove to his brother's board and care home to pick him up for a family celebration. His brother Dave walked to John's side of the car and abruptly stabbed him, fatally wounding him. At the county jail, Dave was visited by a psychologist who knew the family. Peering through the thin slit of the cell door, the psychologist asked Dave what had happened. Dave explained: "I had to stab the devil. The devil was in John's body, and I had to stab him. John is alright; I didn't hurt him. He's alive." The distraught mother explained she had requested her ill son be hospitalized because of his recent instability, but was told "patients' rights" didn't support his hospitalization.*

Because even very psychotic individuals, struggling to appear normal and hide their symptoms, can briefly repeat simple, overlearned phrases that they believe are wanted by their interviewer ("Yes. . .", "No. . .", "I'll take my medicine"), the interviewer must ask more abstract and complex questions to elicit their plans and reasoning for sequential behaviors and identify cognitive deficits. This is especially true of the person with paranoid schizophrenia, whose cognitive processes, even when based on very delusional underlying fears, may be more intact than those seen in other forms of schizophrenia.

This lack of insight, combined with the impairment in memory and learning that appears to be so significant in some individuals diagnosed with schizophrenia and other serious mental illnesses, must be

considered in treatment planning, in family recommendations, in rehabilitation methods, and in the courts. For patients who cannot easily learn from experience or understand the relationship between their behavior and past consequences, even harsh punishments are unlikely to create a link between their behaviors and future consequences or to increase their future impulse control. If they cannot form abstract concepts regarding what they must and must not do, or relate the abstract concept to their present situation, then they cannot generalize to similar behaviors in the future. A psychotic individual may respond to the strongest stimulus present, even if that stimulus is a "command hallucination" that tells him or her to perform some dangerous act. As Keefe and Harvey[3] note, failing to understand they are ill is the most common and most tragic symptom of persons suffering from schizophrenia, with social consequences that range from repeated episodes of psychosis to homelessness, suicide, and—it should be added—criminalization.[3]

> Eduardo has an IQ of 71 and a schizoaffective disorder for which he needs treatment. His mother explains that when "the sickness comes, he doesn't do the right things." When he was 18 years old, while delusional he was arrested twice for setting some small fires in a trash can and in a car, telling people it was part of his job, that he worked for the police, and was assigned to get rid of drug dealers. His third arrest under the "Three Strikes Law" occurred when he removed some items from the house of a longtime friend, who did not want to press charges because he recognized Eduardo belonged in a hospital. His public defender did not mention his mental illness, and Eduardo was sent to prison for 34 years. The judge resisted reconsideration of his sentence, but when the law under which he was sentenced was found unconstitutional, she reheard the evidence and sentenced him to 22 years "because he was dangerous." Because of his withdrawal, confusion, and fear, he was unable to comply with prison routine, and was placed in administrative segregation, terrorized by his voices and delusions as well as by his imprisonment.*

Such a sentence for a patient with schizophrenia appears to be cruel and inhumane punishment.

The cognitive deficits and impaired insight seen in schizophrenia seem to be relatively independent of symptoms such as delusions and hallucinations, may precede these psychotic symptoms, and may remain to some extent even after the delusions or hallucinations are reduced by medication.[3, 28, 31] Indeed, as noted above, memory and learning continue to show some level of impairment during periods of relative remission. If learning is impaired, individuals with schizophrenia may not learn that refusing to take medication results in increased symptoms. If conceptual, abstract thinking and complex problem-solving ability are impaired, these patients may not see the relationship between their noncompliance with treatment and the presence of their disorganized thinking, frightening thoughts, and bizarre behaviors that alienate them from friends, family, and society. They do not "have insight" about the fact that they have an illness, that there are effective treatments for that illness, and that they must receive that treatment to prevent further deterioration. Thus, reliable, consistent, ongoing assessment of this insight is needed to make treatment decisions.

There are other reasons for patient refusals of medication and hospitalization, including dislike of medication side effects,

psychotic denial and negativism, poor education or comprehension of the role of medication in controlling symptoms, psychotic perceptions and delusions, the stigma associated with acknowledgment of mental illness, and situational or control struggles with perceived authority figures. However, both the neurological and the behavioral research reviewed above suggest that lack of insight may be a diagnostically relevant symptom of schizophrenia, is almost certain to be a result of cognitive dysfunction, and would likely preclude the ability of people with these illnesses—especially when severely ill—to understand their illnesses and make logical, appropriate decisions about their need for treatment.

Insight in Bipolar Disorder

Insight has been less investigated in patients diagnosed with bipolar affective disorder, but some of the above studies have also explored the role of insight for this group and suggest some areas for future research. For example, several studies have either directly or indirectly shown an inverse correlation between symptoms of grandiosity and lack of insight.[24, 27, 29] In contrast to patients with schizophrenia, Swanson *et al.*[24] found that manic patients upon admission rated themselves similarly to the physicians with regard to the presence of positive symptoms but strongly denied that these symptoms reflected the presence of a mental illness.[24] In addition, six of the seven noncompliers in research by Schwartz *et al.*[29] were diagnosed as having bipolar affective disorder, perhaps displaying the psychotic denial of symptoms similar to the manic group described by Swanson *et al.*[24] This noncompliant group showed little improvement, with symptoms of conceptual disorganization, grandiosity, suspiciousness, hostility, uncooperativeness, and unusual thought content (i.e., psychotic symptoms that contributed to poor insight about their illness). Because this noncompliance was typically associated with grandiosity, their lack of insight was likely to involve different deficits than those seen in cases of schizophrenia, such as a perceptual distortion associated with strong emotions. The consequences of the lack of insight may be similarly severe.

Implications for Legal Issues

The insistence of many current laws that individuals with schizophrenia and other insight-impairing psychotic disorders be responsible for making their own treatment decisions is often tantamount to insisting that an individual with two broken legs walk to his or her own doctor's appointment for treatment. Schizophrenia is a treatable brain disorder that involves many cognitive deficits that severely impact the individuals ability to live independently in the community. While many individuals understand the role of treatment and medication and are capable of exercising good judgment in making treatment decisions as well as other life choices, many do not. The treatment needed by those who continue to suffer from the deficits of these neurobiological disorders, with impaired insight and poor understanding about the fact that they have a treatable mental illness and need ongoing medication, should be determined by a medical decision, with input

from the individual, the family, and the treatment provider. These decisions should be assisted, not impeded, by a judicial process that combines involuntary commitment and court-ordered treatment decisions in a single hearing, so as to protect the ill person's right to prompt adequate treatment and protection. This impacts on several aspects of policy and law.

First, in determining mental capacity to give informed consent for treatment decisions, insight should be considered an important part of that capacity, one with a neuropsychological basis that strongly affects the person's ability to act in his or her own best interest and to understand and comply with the need for ongoing treatment. As such, insight should be more thoroughly and reliably measured, using both skilled interviewing and available instruments such as the SUMD and the ITAQ. Future research needs to correlate these measures with the person's ability to comply with treatment in the community with various levels of supervision.

Second, use of medical and social history and information from significant others provides essential evidence of an individual's insight and ability to adhere to recommended treatment and to avoid homelessness, rehospitalization, or incarceration. As such, this type of information should be included in as thorough a form as possible for making decisions regarding mandatory treatment or involuntary commitment. Since further irreversible brain deterioration during periods of nontreatment has been indicated by current research on schizophrenia, the state has a duty to exercise its *parens patriae* powers and protect and treat individuals with these disorders who are unable to live safely and undamaged in society. Broader, more flexible standards for court-ordered treatment should be used in making these decisions.

To insure treatment in the least restrictive environment, wider use should be made of outpatient commitment, with decreasing amounts of supervision required only as the individual exhibits increasing insight and compliance with treatment. Schizophrenia is a treatable life-threatening disease. Society's duty to protect the health of mentally impaired individuals should be as strenuously pursued as its duty to protect their civil liberties.

Implications for Treatment

Several of the studies mentioned above indicate that impaired insight is a neuropsychological deficit that is persistent throughout the illness for a large percentage of people with schizophrenia, even for those who have been stable and maintained in the community with residential supervision. These findings suggest three necessary aspects of treatment. First, intensive case management programs are necessary for a large proportion of these individuals, to include careful ongoing monitoring, closer supervision of medication compliance, and objective assessment of their symptoms and abilities to cope with daily demands. Second, continuous patient education should be a basic part of any treatment plans, so as to improve compliance for those who are able to understand the factors that cause their symptoms and how to be constructively involved in their own treatment. Third,

supplemental information from significant others is needed for deciding issues of future voluntary versus involuntary treatment, especially for those with a past history of noncompliance.

Finally, even with these steps, there will be a significant proportion of patients who lack the insight and understanding of their illness that is needed to comply with necessary, appropriate treatment. Rather than condemning this group to frequent rehospitalizations, deterioration of mental and physical health, homelessness, and incarceration, these patients can be identified with present screening methods and closely monitored. When their noncompliance is demonstrated to result in the above negative consequences, the humane action is to take legal and therapeutic steps to provide coerced and supervised treatment that will prevent their decompensation. A modification of some treatment and commitment laws is essential to accomplish this goal.

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