

# A Case Review of Poor Insight in Schizophrenia: How Much Do We Know?

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Schizophrenia, an illness directly impacting 1% of the population worldwide, was estimated to cost the United States \$62.7 billion in 2007.<sup>1</sup> Much of the financial burden comes from the lack of productivity suffered by individuals with schizophrenia.<sup>1</sup> It has been repeatedly shown that adherence to medications and psychiatric treatment directly correlates with improved long-term functioning in this patient population.<sup>2-8</sup> Most clinical researchers would agree that lack of insight is a core symptom of schizophrenia.<sup>8</sup> The prevalence of either partial or complete lack of insight into having a mental illness in patients with schizophrenia has been suggested to be be-

tween 50% and 80%.<sup>2,3</sup> However, in a World Health Organization pilot study from 1992, a number as high as 98% was quoted.<sup>9</sup>

In the past two decades, numerous research articles have focused on analyzing the role of insight and its neurocognitive etiology, and on methods to improve insight. Despite these efforts, controversy remains on how best to define and treat poor insight in patients with schizophrenia. Although differing definitions of insight are used by the various measurement scales, the scales are highly correlated.<sup>10</sup> The most comprehensive assessment of insight includes awareness of illness, awareness of symptoms, and awareness of social consequences.<sup>11</sup>

We present the case of a young individual with schizophrenia whose lack of insight both resulted in a longer duration of illness before seeking treatment and also affected his outcome with medications. This case highlights the need for early assessment and treatment in this population.

## CASE

A 20-year-old white man was admitted to our inpatient unit following verbally aggressive behavior

at home. Upon further exploration, it was reported that the patient was becoming increasingly disorganized in thoughts, was internally preoccupied with decreased sleep, and had poor self-care just prior to admission. Collateral information obtained from his mother indicated that his social and occupational functioning declined in the year prior to admission; he graduated high school but could not complete a semester at college. His mother was convinced that his behavior was related to a medical illness. The patient had a history of Lyme disease and was successfully treated. Despite a complete medical workup, the patient continued to seek several consultations with the hope of finding a medical cause for his cognitive decline and thought disorganization. He also reported somatic complaints, including headache and abdominal cramps. Visits to a gastroenterologist and neurologist did not reveal a culprit. On admission, his routine labs, including complete blood count, comprehensive metabolic panel, and liver function tests, were within normal limits. The patient also had a normal physical exam. Medical consult did not recommend further medical tests.

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## DIAGNOSIS

## Schizophrenia

Due to the duration of his symptoms and presence of active positive symptoms, he was diagnosed with schizophrenia. He refused to take medications, and a court order for treatment over objection was sought.

Despite improvements in symptomatology of the early stages of schizophrenia, the patient's lack of insight into his mental illness persisted. He denied ever hearing voices or auditory hallucination of any kind, or experiencing delusions. He continued to maintain that his hospitalization was the result of a miscommunication, wherein he called an ambulance for someone else and was mistakenly brought to the hospital. He continued to want to seek a causal link between his symptoms and medical illness. Several family meetings were held during his more than month-long stay to provide psychoeducation to the family. The patient was discharged (due to improved behavior and interaction on the unit) with a long-acting decanoate injection. Until the day of discharge he was uncommitted to seeking follow-up care, but the care team scheduled the patient for follow-up at a partial hospitalization program.

This young individual's lack of insight resulted in both a longer duration of illness before seeking treatment and also affected his outcome with medications. This case highlights the need for early assessment and treatment in this population.

## DISCUSSION

Insight is a multidimensional concept that ranges from having awareness of the illness, of the need for treatment, and of the social consequences associated with the disorder. Our case was an example of how lack of awareness of illness can lead to refusal to seek psychiatric attention or treatment. Our patient had a number of risk factors for poor insight, such as being in the initial phase of the illness, having a relatively early onset, having significant positive symptoms (including disorganization and delusions), and having a severe presentation.<sup>2-4,7,8,12</sup> Literature also suggests that a longer duration of untreated psychosis and lower premorbid intelligence correlates with decreased insight into illness, especially in the early acute phase.<sup>2,13</sup> Both positive and negative symptoms inversely correlate with insight, as do overall global symptoms.<sup>2,4,5,7,12</sup>

One of the major limitations of the literature on insight in schizophrenia has been a lack of standardization for defining and measuring insight. Attempts at measurement have been incorporated into a number of clinical scales.<sup>3</sup> Despite concern over the number of rating scales used, researchers contend they are all highly correlated.<sup>10</sup> Currently, however, the Scale to Assess Unawareness of Mental Disorder (SUMD) has become the standard of measuring insight.<sup>11</sup> It comprehensively assesses a number of variables associated with insight, including awareness of illness, awareness of specific symptoms, and awareness of social consequences.<sup>7</sup>

Before the past two decades, it was accepted that perceived lack of insight in patients was a coping mechanism manifesting as denial.<sup>2</sup> More recently,

other theories have emerged, but there remains scientific support for the denial theory — studies have shown a correlation between increased self-deception and decreased insight in schizophrenia.<sup>14,15</sup> Moreover, multiple studies have established a positive correlation between insight and depression, supporting the theory that insight may be a psychological reaction to mental illness.<sup>7,10,13</sup> Our patient's willingness to undergo medical testing but resistance to any psychiatric diagnosis is one factor of his presentation consistent with the denial theory.

A number of new theories regarding potential etiologies of insight deficits were outlined in a review from 2008, including a positive symptom, a negative symptom, a disorganized symptom, a metacognitive problem, a neuroanatomical deficit, a psychological defense, or a combination of them<sup>10</sup> (Table 1) Given that poor insight is correlated with both negative and positive symptoms, both of these explanations are feasible. Insight as a negative symptom is explained as a patient's lack of attempt to understand his or her illness, whereas insight as a positive symptom is thought of as a delusion of being healthy.<sup>6,10</sup> This idea of delusional thinking underlying poor insight directly relates to our patient, as his delusions were one of his major symptoms

Moreover, a number of studies have replicated the finding of delusions with failed insight.<sup>2,16</sup> Engh et al.<sup>16</sup> delineate that delusions are associated with low self-reflection and high self-certainty, a cognitive process synonymous with poor insight. On the other hand, hallucinations in the absence of delusions were found to be associated with high self-reflection and low self-certainty.<sup>16</sup>

This complexity may explain both the only moderate association between positive symptoms and lack of insight, and also the severe insight deficit in our patient, given his absolute denial of hallucinations but clear portrayal of delusions. Further, his delusions of grandeur may have made it psychologically more difficult to accept limitations in his cognitive function. Again, pertinent to our patient, research has found a relationship between disorganized symptoms and impaired insight but has failed to find causality.<sup>10</sup>

From a neuroanatomical perspective, the frontal cortex and the cortical midline structures are brain regions impacted early on in schizophrenia, and these are regions associated with insight processing.<sup>17</sup> More specifically, the dorsolateral prefrontal cortex has been implicated in self-monitoring deficits and the orbitofrontal cortex in symptom misattribution, an idea further supported by theories developing from functional magnetic resonance imaging (fMRI) studies.<sup>10,18</sup> Along these lines, frontal and parietal gray matter reductions at baseline correlate with impaired insight into schizophrenic symptoms.<sup>13</sup> The reality is likely that impaired insight is a combination of multiple factors, all of which need to be more carefully addressed in the coming years of research.

Improving insight through different treatment methodologies has been studied (Table 2). In 2002, Aguglia et al.<sup>12</sup> showed that positive and negative symptoms were reduced after the administration of second-generation, compared with first-generation, antipsychotics. Further, insight levels improved significantly after the switch to newer antipsychotics, and more so with long-lasting, second-generation

TABLE 1.

### Theories for Etiology of Lack of Insight in Schizophrenia

Coping Mechanism <sup>2</sup>	Positive Symptoms <sup>6,10</sup>	Negative Symptoms <sup>6,10</sup>	Failed Self-Monitoring <sup>10,18</sup>
Denial theory	Delusions of health	Lack of attempt to understand illness	Cortical midline structure reductions

TABLE 2.

### Possible Strategies to Improve Insight in Patients with Schizophrenia

Therapy-Based Strategies	Description / Comment
Cognitive behavioral therapy <sup>4,8</sup>	To identify and correct maladaptive beliefs about not being “ill.”
Motivation interviewing <sup>22</sup>	A client-centered counseling style for eliciting behavior change by helping clients explore and resolve ambivalence.
Psychoeducation <sup>8</sup>	Improve understanding of the illness through ongoing booster sessions, educational material to clients.
Community programs <sup>8</sup>	Multimodal videotapes, workbooks, and live classes delivered in a group setting to specifically target treatment adherence.
Family therapy <sup>23</sup>	Sessions to provide education and support, detect relapses, and help early intervention.
Non-Therapy-Based Strategies	
Second-generation antipsychotics <sup>12,20</sup>	Improve neurocognition with atypical antipsychotic medications, clozapine in particular.
Long-acting antipsychotics <sup>19,24</sup>	Clients on long-acting depot injections may have a more favorable medication attitude and outcome.
Longer hospitalizations <sup>8</sup>	Although there is no clear benefit on insight, hospitalization may improve treatment adherence.

antipsychotics.<sup>12,19,20</sup> Unfortunately, this finding has not been replicated in more-recent literature.<sup>8</sup> Our patient was discharged on an oral second-generation antipsychotic and long-acting haloperidol injection. Given the improved adherence with decanoate injections and the superiority of second-generation antipsychotics, this was an

appropriate medication regimen.

Psychotherapeutic interventions that appear to improve insight are twofold. First, cognitive behavioral therapy has been shown to improve awareness of illness by identifying and correcting maladaptive thoughts and actions through self-reflective methods.<sup>4,8</sup> Metacognitive approaches

of therapy show promise.<sup>21</sup> Secondly, motivational interviewing, which also uses methods of metacognition and self-assessment strategies, appears valuable in improving insight.<sup>22</sup> Unfortunately, these strategies have yet to be evaluated in a randomized controlled trial. Community programs, educational interventions, and hospitalizations have all shown merit in improving insight, corresponding to the length of the program.<sup>8</sup> Our patient's hospitalization and discharge to a partial program may help him gain better understanding of his illness. Although family interventions have not been conclusively shown to impact insight, our patient has a strong relationship with his mother and, therefore, his insight and adherence may improve with her acknowledgement of his disease.<sup>23</sup>

Poor insight is an extremely common and detrimental cognitive barrier in schizophrenia. Its etiology is unknown but likely multifactorial, and improving insight is challenging and not completely understood. Although improved insight may correlate with increased depression, it is inversely correlated with number of hospitalizations. There also appears to be a clear association between insight and adherence, especially in the treatment phase of the illness.<sup>2,4,7</sup> Ultimately, the benefits of treatment adherence and long-term functioning outweigh the negatives.<sup>2,4,5</sup> However, more research needs to be focused on anatomic etiologies of poor insight that may help in developing effective treatment strategies and thus improving prognosis in this population

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