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Treatment Challenges of Delusional Disorders

by

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Abstract

This report reviews the case of a 62-year-old female experiencing a delusional disorder (DD), persecutory type with bipolar I disorder in partial remission. Various studies describe the challenges associated with treating a DD and evidence is mixed. Evidence on etiology, current and future treatment, and treatment challenges were appraised from 30 articles. Methods of research included placebo studies, clinical trials, survey questionnaires, retrospective, and prospective methods. Research design methods involved controlled single-blind procedures, systematic reviews, expert opinions, case studies, and randomized control trials. Although DD is not well understood, positive outcomes have been noted when patients are treated with a combination of medication, cognitive behavioral therapy, and behavioral learning techniques. High quality research on treatment guidelines are needed to improve understanding among clinicians and patients.

*Key words: Delusional disorder, persecutory delusions, treatment challenges of delusional disorder*
Background

People with DD, persecutory type believe they have been or will be harmed, persecuted, or conspired against. Actions are taken to protect themselves against the actions of the suspected source, sometimes resorting to violence and requiring hospitalization (Tamminga, 2018). The etiology is unknown, but factors such as perception of threat, fatigue, emotional stress, and reasoning biases may contribute as well as a genetic predisposition to a selective D2 receptor-related hyper-dopaminergia and dopamine dysfunction (Manschreck, Marder, & Hermann, 2018).

Approximately 20% to 30% of people in the general population have thoughts of paranoia on a regular basis. Only 10% of these individuals will hold on to a delusion despite a contrary reality. Lifetime prevalence in the general population is approximately 0.2% with onset occurring in middle to late adulthood. Forty-eight percent of people with a delusion disorder have the persecutory type and they are also likely to have a mood disorder (major depression and bipolar disorder) (Manschreck et al., 2018; Vicens, Sarro, & McKenna, 2014).

Current treatments frequently use antipsychotics, antidepressants, and mood stabilizers. Cognitive behavioral therapy (CBT) and psychotherapy have also been shown to be helpful (Skelton, Khokhar, & Thacker, 2015). However, high quality evidence for treatment of the disorder is lacking and there are no treatment guidelines, rendering it quite difficult to treat. This paper will explore current evidence about the etiology, treatment strategies, and challenges of treating a DD.

Case report

P.J. presented to an emergency room after police found her driving on the opposite side of the road, forcing several cars off the road. Police described her as not being reality-based and
aggressive by pulling out a knife. When police asked her why she had been driving on the wrong side of the road, she stated, “God told me they were boy scouts that needed to be killed.”

She required restraints and injections when presenting to the emergency room. Staff reported she made references to God speaking to her and having a beautiful mind with a gift for extrasensory perception (ESP). She lacked insight into her symptoms and was subsequently hospitalized for three weeks in an inpatient psychiatric unit during which she refused to take any medications. Unwilling to engage in treatment, she was admitted to a behavioral health hospital in the community for treatment.

When meeting with P. J. on admission, she presented as grandiose, pleasant, euphoric, irritable at times with pressured speech, and deterred from answering specific questions about events leading up to her hospitalizations. She held elaborate beliefs about the CIA and homeland security following her and falsifying all police reports that involved incidents related her mental illness. Her county case manager and husband were also part of this elaborate plan to ensure she was wrongly hospitalized for a non-existent mental illness. Her husband’s motive for enabling her forced hospitalization and county commitment was an attempt to cover up his “abusive ways” during their 40+ years of marriage.

When asked why she was driving on the wrong side of the road she denied this and stated she was looking for friends on the side of the road who were in need of help. In her mind, she never put anyone in harm’s way. Rather, she insisted she was giving bystanders on the road the “boy-scout sign” and wishing them well. She denied trying to run cars off the road, talking to God, hearing God talk to her, or pulling out a knife on others and insisted these were false allegations created against her. Furthermore, she verbalized stealth readiness to fight a proposed Jarvis order that would mandate she receive treatment with neuroleptic medication(s).
P.J. reported having a previous manic episode two years ago that required hospitalization. She endorsed having a bipolar I disorder but attributed this to black mold exposure after remodeling her basement. She stated she hadn’t slept for seven days and was “getting too carried away with trying to track down ISIS on the internet”. During that hospitalization, she reported experiencing some benefit from oral Risperdal, but when they discharged her on 5mg, she felt as though it “zombified” her. Her primary care provider tapered her off Risperdal over the course of a year after she reported having transient chest pain from the medication.

PJ’s medical history, health and physical exam, labs, Lyme’s screen, CT scan were insignificant. There was little to no history of problems with alcohol or a substance use problem. Her father died three years ago of cancer and had a history of a suicide attempt. Family history of mental illness is not clear other than her family having a reputation for being excessively dedicated to work and education pursuits. Her case worker reported P.J. did well when she took Risperdal and was a completely different person.

Throughout the course of her hospital stay, her insight remained poor. Treatment plan meetings entailed her vehemently disagreeing with all aspects of her diagnosis and treatment. She was frequently accusatory to the treatment team and anyone who supported treatment. She trusted only people who she perceived to be anti-medicine: her primary care provider and a former psychiatrist who has a popular anti-psychiatry internet blog in Minnesota.

A Jarvis order was eventually granted for four different antipsychotic medications. She begrudgingly agreed to take a daily oral dose of Risperdal 1.5mg. She was very distressed by this and requested high doses of aspirin as needed to “cancel out the Risperdal”. Treatment recommendations were to continue to increase the Risperdal for resolution of symptoms.
However, she demonstrated extreme of distress at the thought of increasing the dose more than 1.5mg and believed other medications would be worse than Risperdal.

Toward the end of her hospital stay, there was some improvement in P.J.’s symptoms, i.e. slightly less grandiose and guarded. Interactions with her were less intense and her husband reported they were able to communicate better. However, low insight persisted with a desire to manage the “bipolar disorder” non-medicinally when the Jarvis order expires. Total denial of a DD ensued.

Aftercare plans for P.J. included follow-up with her primary care provider as he was in agreement and understanding of the Jarvis and Commitment processes. P.J. also had plans of regularly attending a bipolar disorder support group in her area. Two weeks post-discharge, she and her husband were doing well at home.

Her initial diagnosis was Bipolar I Disorder with psychotic features versus schizoaffective disorder, bipolar type. She displayed some symptoms of mania or hypomania (some grandiosity, irritability, and pressured speech), but did not meet criteria for a full manic episode. She showed no evidence of experiencing a depressive episode.

Schizoaffective disorder was ruled out because she did not meet Criteria A for schizophrenia (disorganized speech, catatonic or grossly disorganized behavior, or negative symptoms) (APA, 2013; Shea, 2017). DD, persecutory type for longer than one month was fitting as her level of daily functioning was not significantly impaired. Also, the persecutory thoughts occurred in the absence of a manic or depressive episode. Possible medical conditions, medications, or substances that may have contributed to her delusional thinking were also ruled out (First, 2014). Therefore, her diagnosis was concluded to be bipolar I disorder, in partial remission with the primary diagnosis being DD, persecutory type.
Literature Review

Definition

DD is the least disabling of the schizophrenia spectrum disorders. It is a thought disorder that often goes unrecognized and is based on faulty cognition. Interestingly, the delusion does not typically interfere with daily functioning and people tend to appear to lead normal lives. Rarely do they come to the attention of needing psychiatric services. Those who do present with the need for services are likely to be in great conflict with those around them due to their elaborate beliefs (Fear, 2013).

Type

Persecutory delusions were originally distinguished from other types of delusions and melancholia by Lasegue (Semelaigne, 1894). It is the most common type of delusion that can occur and can involve the inanimate or animate, people or machines, systems, organizations, institutions, or a vague influence (Kiren & Chaudhury, 2009; Reichenberg & Seligman, 2016). When a person feels slighted, resulting feelings lead to the development of a delusional system that includes a fear of being watched or followed, poisoned, cheated on, or conspired against (Reichenberg et al., 2016). It often persists despite evidence to the contrary (Kiren et al., 2009).

Complications

Beliefs of persecution can cause suicidal or homicidal ideation and sometimes escalate to violence or lawsuits (Reichenberg et al., 2016). Suicidal behavior occurs between eight and twenty-one percent of the time in DD and is more prevalent among the persecutory type of DD. The ideations and degree of past and present impulsivity should be assessed carefully. Attempts should be made to understand how the patient previously coped with the persecutory
beliefs in order to determine degree of risk (Gonzalez-Rodriguez et al., 2014a; Manschreck et al., 2018).

**Diagnostic Criteria**

According to the American Psychiatric Association (2013), diagnostic criteria for DD involves the presence of one or more delusions that last one month or longer and does not meet criteria A for schizophrenia. Daily functioning is not significantly impaired, the delusion does not occur during a mood episode, and the delusion is not attributable to a medical condition, substance, or medication (First, 2014).

There are seven types of delusions with or without bizarre content: erotomanic, grandiose, jealous, persecutory, somatic, mixed, and unspecified (APA, 2013). Persecutory delusions are commonly seen as part of a psychotic process in other disorders such as bipolar disorder, schizophrenia, psychotic depression, and substance-induced states (Shea, 2017).

Medical causes should be ruled out particularly for persons over the age of 40. Various medical conditions include endocrine disorders, brain tumors, delirium, malignant gliomas, infections, and temporal lobe epilepsy are some. Dementia should also be considered due to 20% of patients with Alzheimer’s presenting with paranoid delusions. However, this tends to occur later in the disease process (Manschreck et al., 2018).

**Prognosis**

Delusional course varies and involves brief or fleeting states that spontaneously remit while other respond to standard treatment. Conversely, others continue to develop elaborate beliefs into a comprehensive and complex system that can remain unchanged with regular medication (Kiren et al., 2009). Persons with persecutory, erotomanic, and somatic delusions tend to recover quickly and have a better prognosis than patients with grandiose and jealous
TREATMENT CHALLENGES OF DELUSIONAL DISORDERSTypes. Delusions that were brief in duration with a rapid onset among patients who were functioning well have better prognosis (Shea, 2017). Remission has been reported to have occurred in one third of cases, rendering two thirds to be life-long with continuous or periodic delusions (Manschreck et al., 2018).

Causes

Paranoia severity exists on a spectrum with the severest form being persecutory delusions, i.e. threat beliefs and are thought to have developed as a result of environment, genetics, and psychological factors. At the core of the persecutory beliefs is that others seek to deliberately inflict harm. Maintenance of this thought process includes worry, negative self-beliefs, anomalous experiences, sleep dysfunction, reasoning bias, and safety behaviors (Freeman, 2016).

Biological

Neurobiological theories involve dysfunction in the thalamus, basal ganglia, septo-hippocampal region of the brain, semantic memory, hypometabolism in the prefrontal and anterior cingulate regions, and hyperactivation of the cingulate gyrus and right inferior parietal lobule (Kiren et al., 2009). Patients with DD may have abnormalities in the brain such as a reduction in grey matter in the bilateral insula and medial frontal/anterior cingulate cortex (Vicens et al., 2016). Other studies have shown grey matter reduction in the striatal and thalamic regions (Wolf et al., 2014).

There is evidence of a relationship between delusions and elevated perfusion and overactivity of the hippocampus. The hippocampus plays an important role in retrieving contextual information. Overactivity causes a misinterpretation of incoming stimuli and can lead to delusional beliefs. In turn, this can cause an abnormal neurotransmission of dopamine in the
striatum and ventral tegmental area. Overtime, it is suggested that elevated perfusion in the striatum could cause an increase in distressing symptoms and on-going evolution of illness (Wolthusen et al., 2017).

Kondo et al. (2013) suggests that 5-HT3A receptors play a role in DDs and are responsible for the extinction of tone-cued and contextual fear. 5-HT3A has been suggested to play a role in the expression of neurons in limbic regions of the brain such as the cortex, amygdala, and hippocampus and subsequently plays a role in spatial learning, memory, social behavior, and anxiety-like behavior (Kondo et al., 2013).

**Adversity and Trauma**

Adversity may also play a role with one’s degree of persecutory ideation. Valiente et al. (2017) found an association between high levels of paranoia and adversity experiences that lead to experiential avoidance. Furthermore, negative beliefs about others and self and dysfunctional strategies of regulation of self-esteem are suspected to have some level of connection to persecutory thinking.

Interestingly, genetic research evidence suggests the dopamine D1 receptor gene does not necessarily play a role in DDs (Fear, 2013). Scott, Chant, Andrews, and McGrath (2007) found that an increase in delusional experiences can occur after exposure to a traumatic event if post-traumatic stress disorder (PTSD) does not develop. There is some evidence of a relationship between endorsement of delusional experiences and the number and intensity of traumatic event experiences (Calvert, Larkin, & Jellicoe-Jones, 2008; Scott et al., 2007).

**Psychological compensatory mechanisms**

Delusional beliefs may serve as a psychological compensation for life disappointments such as when they feel taken advantage of, mistrustful, isolated, helpless or stressed. People
with the disorder can be defensive, quarrelsome, or moody. Others may be grandiose and believe they have special knowledge or are successful in order to increase self-esteem (Shea, 2017).

Psychological theories associated with the development of DDs include stress and vulnerability, personality, attributional bias, probabilistic reasoning bias, emotions and perception, mind (paranoid syndromes), psychodynamic (Freud’s posit of denial and projection of repressed impulses), explanations of experience, and learning based on fear (Kiren et al., 2009). Faulty cognitions and maladaptive coping can lead to DDs and include having an attributional bias where others are blamed instead of themselves, jumping to conclusions without evidence, confirmation bias in which the person seeks proof to confirm their beliefs, reaction formation, and projection (Reichenberg et al., 2016; Shea, 2017). Psychological factors include low self-confidence, excessive worry, reasoning biases, safety-seeking strategies, intolerance of anxious emotions, and various anomalous factors (Freeman, 2016; Kiren et al., 2009).

Subtle cognitive impairments have been noted in some studies in which neuropsychological assessment found dysfunction in working memory, clear impairment in executive functioning and memory, changes in personality, and social cognition deficits (Manschreck et al., 2018). Negative cognition and depressed mood are frequently associated with paranoid ideation. Ideas about the self that are negative appear to determine the strength of delusional thoughts of persecution (Davis & Gaurava, 2015).

**Current Treatments**

**Psychopharmacotherapy**

Establishing a therapeutic relationship with the patient is crucial. Preventing and managing complications of the disorder is also an important part of treatment. If the patient becomes dangerous to self or others, hospitalization may be indicated. Medication can be
helpful with the long-term goal of ensuring the patient focuses on constructive and gratifying areas of their life and shift away from the delusional content, if possible (Tamminga, 2018).

Medication management of symptoms demonstrate a 50% positive response rate to antipsychotics. Antipsychotics have antagonist effects on neurotransmitters, glutamate and dopamine, specifically (Skelton, 2015; Stahl, 2013). A systematic review of case series and observational studies found that antipsychotics achieved good response rates among 33.6% of 385 patients. First generation antipsychotics showed significantly better outcomes compared to second generation antipsychotics. However, no specific antipsychotic more superior than the other (Kulkarni et al., 2017; Munoz-Negro & Cervilla, 2016).

Pimozide, risperidone, olanzapine, and ziprasidone have been shown to be effective, particularly when diagnosis occurs early (Kulkarni et al., 2017; Shea, 2017). Prospective data demonstrated successful treatment with risperidone among patients with paranoid schizophrenia. Risperidone (or Risperdal) has shown to play a role in the 5-HT3 gene and is thought to increase 5-HT3A receptor gene expression. 5-HT3A regulates the release of dopamine, gamma-aminobutyric acid (GABA), and acetylcholine (Chen et al., 2017; Kondo et al., 2013).

A case report by Davis et al. (2015) discussed successful treatment with Lurasidone as a monotherapy for a patient with a DD, persecutory type. Within 10 days of treatment, the patient’s delusions fully remitted, and insight improved. Progress was maintained seven months post-discharge (Davis et al., 2015).

DDs have been being linked to a pathology of an obsessive attention and obsessive-compulsive disorder (OCD). Id’ees fixes or a desire that dominates the mind is a 19th century belief that there is a pathology of attention underlying the disorder. Evidence shows that high
TREATMENT CHALLENGES OF DELUSIONAL DISORDERS

Doses of SSRIs are effective for OCD and some evidence has shown them to be also helpful for DD (Fear, 2013).

As preoccupation with the delusion decreases, depression and anxiety may increase due having been previously masked. It is important to assess and treat arising co-occurring disorders. However, the mechanism of antidepressants and mood stabilizers for DD remains unclear (Maina, Albert, & Bada, 2001; Skelton et al., 2015).

**Cognitive behavioral therapy**

Current treatment for DD also involves cognitive behavioral therapy (CBT), social skills training, psychoeducation, and family therapy. CBT helps the person modify their core beliefs, reduce social isolation, and lead to a reduction in conviction regarding the delusion. Patients will also learn how to respond and react to their delusional beliefs and experience improvement in social relationships (Fear, 2013).

Clinicians need to approach the person with a delusion without confronting the delusion or validating it. Ensuring a positive relationship with the patient is crucial with the eventual hope that the clinician can gently suggest possible explanations for the delusions and invite them to be curious about alternative explanations. Therapists need to target the reasoning processes that underlie the maintenance of the delusional system and address emotional dysfunction (Davis et al., 2017; Shea, 2017). Additionally, CBT with an emphasis on reducing worry may decrease in paranoia (Freeman et al., 2015).

Freeman (2016) suggests that patients with persecutory delusions need to relearn safety and enter feared situations after reducing psychological factors. During therapy, emphasis needs to be on establishing knowledge of current safety versus disproving past perceptions or delusions in order to reduce worry. The Feeling Safe Program (20 sessions) emphasized this and was found
to be effective in which seven of eleven participants no longer meet criteria for a delusion (Freeman, 2016).

A single-blind randomized controlled trial found that cognitive therapy reduced psychiatric symptoms in a study of 74 individuals with schizophrenia spectrum disorders not taking antipsychotic medications. Of the 74 participants, two had serious adverse events related to the CBT trial (one attempted an overdose after therapy and one became a risk to others after therapy). Cognitive therapy also improved social and personal functioning, cognitive dimensions of delusional beliefs, and hearing voices. However, it didn’t reduce the level of distress associated with delusional beliefs, voice hearing, self-rated recovery, social anxiety, or depression (Morrison et al, 2014).

Individualized metacognitive training (MCT+) is a new therapy designed to target delusional beliefs among people with psychosis. MCT has been used since 2007 to help patients with delusions raise self-awareness of thinking patterns that lead to their delusions. A recent study showed the effectiveness of MCT in patients with schizophrenia with a lasting change of 6 months. A randomized clinical trial was conducted among 54 patients with active delusions and/or had a schizophrenia spectrum disorder. There were moderate reductions in delusional symptom severity with improved insight (Balzan et al., 2018; Liu et al., 2018).

SlowMo is a digital therapy that helps people with DDs slow down their thinking and reduce their fear of harm from others. It addresses fast thinking, which is believed to contribute to developing and maintaining paranoia. A trial is currently in place to prove its level of efficacy in the role of paranoia and set to be completed in 2019 (Garety et al., 2017).

Behaviorism
Behavior learning theories assert that delusions can be treated by use of extinction and reconsolidation (Kiren et al., 2009). Extinction is a behavior principle that occurs only when a target behavior no longer has a reinforcing consequence. If the target behavior is intermittently reinforced, it will continue (Miltenberger, 2012).

If there is an element of associative learning that occurred during delusion formation, then extinction may assist to resolve the delusion. Extinction would result in a decline in responding to a certain stimulus related to the delusion. Prediction error (negative) would lead the person to categorize the extinction as different from the original reinforced stimuli or situation. The person would then learn not to expect the associated stimuli in that situation in the future. This would not involve unlearning of the original associated stimuli, but would result in a formation of a new association between the extinction situation and absence of the reinforcer. Most importantly, extinction experiences will invoke an inhibitory learning process that will eventually override the original cue response (original stimuli or reinforcer) in the midbrain (Kiren et al., 2009; Miltenberger, 2012).

**Treatment Challenges**

**The nature of DD**

The nature of the disorder itself, mistrust of people, lack of evidence for treatment, and fear of the consequences of sharing information, i.e. involuntary commitment or police involvement pose as challenges in treatment (Shea, 2017; Skelton et al., 2015). Trust is very difficult to obtain among individuals with DD. A lack of evidence for treatment enables a powerful argument against engaging in treatment. People DD often maintain normal level of functioning and often doing have symptoms warranting emergency or forced treatment (Skelton et al., 2015). Further complicating factors is a lack of treatment consensus with regards to what
is the best method of treatment for DD and how to assess patient response to treatments (Gonzalez-Rodriguez, 2018).

**Adherence**

People with DDs are currently being viewed under the lens of treatment for schizophrenia spectrum disorders. This is thought be the result of individuals’ reluctance to engage in treatment. Measuring adherence to antipsychotic medications is difficult. A systematic review found that 66% of reviewed studies used subjective methods to ascertain adherence to medications. A higher rate of adherence was found in three studies that used objective means to measure adherence (plasma serum) resulting in a range of adherence of 92.6%-100%. However, adherence was likely attributed to the subjects knowing they were being monitored (Estrada, Monreal, Deigo, Labad, & 2018).

**Disagreement on DD**

There is vast disagreement and confusion in the literature about what constitutes a DD as well as which co-morbidities are allowed. There needs to be a different way of classifying this disorder as it is neither an affective disorder nor a schizophrenia spectrum disorder (Fear, 2013). Kiran and Chaudhury (2009) describe essential criteria of how to distinguish different forms of beliefs such as over-valued ideas versus a true delusion. They believe the criteria for a delusion does not necessarily lie in the person’s certainty or conviction of the delusion nor in their incorrigibility. Rather, a delusion is determined within the contexts and origins of the patient’s own experiences. In other words, a delusion is an experience rather than a belief or judgement. The delusional experience is not an interpretation of meaning, but rather meaning directly experienced, i.e. an experience that hasn’t yet had the chance to pass thru rational thought or judgement. There is no interpretation of meaning of the experience. There is only the
experience. Subsequently, the experience emerges thru a lens of past psychic events and are traced back to specific affects, desires, fears (worst case scenarios), and drives, i.e. irrational mediums void of a mediation by logic. The delusion often has overwhelming personal significance and is determined by the social, emotional, and cultural background of the patient (Kiren et al., 2009).

**Limited strong evidence**

Furthermore, no studies are available to distinguish treatment and efficacy of antipsychotics for DDs in older patients (Colijn, Nitta, and Grossberg, 2015). The only evidence available speaking to the relevance of age included people with onset of illness in their middle 40’s and evaluated in their early 50’s. This was a longitudinal observational study that found that long-acting injectables (either risperidone or paliperidone palmitate) demonstrated greater improvement in negative and positive symptoms compared to patients treated with oral antipsychotics (Colijn et al., 2015; Gonzalez-Rodriguez et al., 2014b).

A systematic review sought to determine the effectiveness of medications and psychotherapy in comparison to placebo among persons with DD. The results included limited information on specific medication efficacy and high risk of bias. There was a positive effect for CBT with improving social self-esteem, but unknown information about social function. Information was also limited with regards to psychotherapy as many clients left therapy early. The review concluded that there is limited quality of evidence to for developing treatment recommendations for DD and no evidence for improvement in overall functioning (Skelton et al., 2015).

Cognitive behavioral therapy is beneficial, but time-consuming and requires many resources. If the individual agrees to engage in therapy, they can often be frustratingly
loquacious during sessions. They have boundless evidence to support their delusions and create elaborate methods of refuting any evidence against their belief. There is no room for coincidence, misunderstanding, or different interpretation of the facts. They also often fail to take their medication(s) (Fear, 2013).

**Implications**

**Research needs**

In order to make recommendations that are generalizable to people with DD, there needs to be high quality research conducted on DD. There is heavy reliance on case reports and a need for high quality randomized trials for DD treatments. People with DDs should be recruited into larger studies among people on a spectrum of psychoses (Fear, 2013; Skelton et al., 2015).

Improved evidence of the role of serotonin and subgroups of 5-HT3A in fear memory regulation is also needed (Davis et al, 2015; Kondo et al., 2013). Consensus among researchers on measuring antipsychotic response and methods used to study treatment adherence in DD (Estrada et al., 2018; Gonzalez-Rodriguez et al., 2018). Furthermore, delusional thoughts processes cannot be corrected by medications alone and developing effective and accessible psychological interventions is a priority (Fear, 2013; Garety et al., 2017; Liu et al., 2018).
References


