



Case Management Matters

The Case for Case Management in Schizophrenia

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Schizophrenia is a severe and persistent mental illness that is defined primarily by the episodic presence of psychotic symptoms (American Psychiatric Association, 2013). However, it is becoming clear that schizophrenia is a developmental neuropsychiatric disorder (Abboud, Noronha, & Diwadkar, 2017; Dong, Wang, Chang, Luo, & Yao, 2018) with significant cognitive (Seidman & Mirsky, 2017), motor (Abboud et al., 2017), physiologic (Laskaris et al., 2016; Rajasekaran, Venkatasubramanian, Berk, & Debnath, 2014), and anatomic involvement (Dong et al., 2018; van den Heuvel & Fornito, 2014; Yu et al., 2017). Within this realm of abnormalities, psychosis is only one of many problematic symptoms. Nonetheless, because of its dramatic presentation, potential for immediate danger, and the fact that it is the only symptom that appears responsive to medications (Motiwala, Siscoe, & El-Mallakh, 2013; Stevens, Dawson, & Zummo, 2016), psychosis always takes central stage.

Seeing Schizophrenia With a New Lens

It is becoming clearer that psychosis in schizophrenia is actually a secondary phenomenon that occurs

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as a consequence of other brain dysfunction; specifically, the frontal lobe is incapable of performing basic frontal lobe functions. The frontal (or prefrontal) cortex in humans is the major brain structure that has the function of anticipating the future; consequently, it is needed to solve almost all day-to-day problems (Mubarik & Tohid, 2016). When subjects with schizophrenia are confronted with typical adult issues, such problems associated with education, employment, living needs, or relationships, their frontal cortex sends a signal to the midbrain (where dopamine-releasing neurons reside) demanding more dopamine to address the need of problem-solving (see Figure 1). This is actually no different from any individual facing similar demands. Normally, the midbrain responds by sending dopamine to upper structures. However, in schizophrenia, either the frontal cortex is unable to utilize the dopamine, or the mesocortical pathway from the midbrain to the frontal cortex is dysfunctional (see Figure 1) (Van Veen, Vink, Ramsey, & Kahn, 2010; Weinberger, 1987). Because the mesolimbic pathway is intact, the requested extra dopamine signal is sent to the limbic system. In the setting of ongoing frontal cortical demand, the signal to increase dopamine output continues without benefit to the frontal cortex and with ultimate excessive dopamine in the limbic system (see Figure 1) (Weinberger, 1987). It is this extra dopamine that produces the psychosis that will frequently result in hospitalization and is the primary need for antipsychotic medications. It is important to note that the excessive dopamine release in the limbic system was specifically secondary to frontal-cortical demand from the environment.

Antipsychotic medications may indeed reduce the risk of recurrence of psychosis, but they do so at a very high physical cost to the patient. In addition to metabolic and cardiovascular issues (De Hert, Detraux, van Winkel, Yu, & Correll, 2011; Szmulewicz, Angriman, Pedrosa, Vazquez, & Martino, 2017), antipsychotics have adverse consequences to our patients' brains. In most of the brain of patients with schizophrenia, dopamine function is not abnormal. Consequently, antipsychotic medication will cause inadvertent and unwanted dopaminergic dysfunction such as Parkinsonism, hyperprolactinemia,

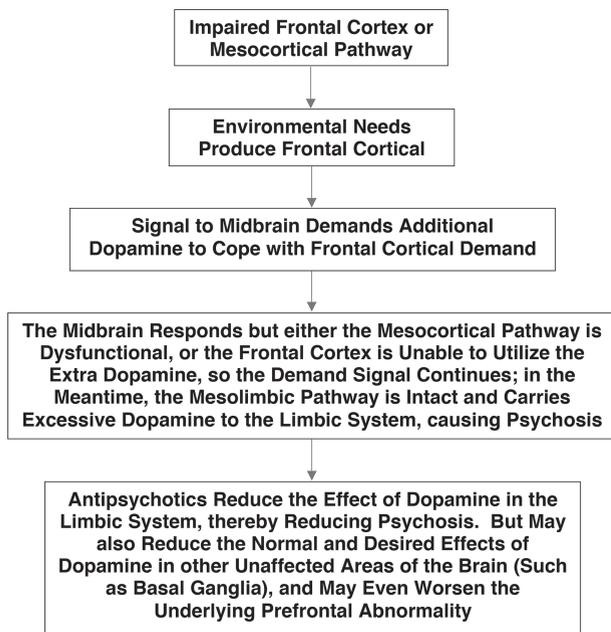


FIGURE 1
The mechanism by which frontal cortical demand induces psychosis in schizophrenia (Weinberger, 1987).

tardive dyskinesia, and worsening of negative symptoms by reducing motivation and ability to perceive pleasure (Awad, 2019; Morrison, Meehan, & Stomski, 2015). Alternatively, addressing the underlying frontal cortical demand would appear to be a much more effective strategy. This can be done with case management. By utilizing the skills and experience of the case manager, the patient is helped problem-solve for themselves, with the case manager’s cues and encouragement, or the case manager can solve problems for the patient in those cases where the patient appears incapable.

Each case management intervention is a new opportunity to advance the patient from needing the case manager to problem-solve on his/her behalf to gaining self-control and new abilities, even if a very small step.

Because patients with schizophrenia have impaired functioning of their frontal cortex (see Figure 1) (Van Veelen et al., 2010; Weinberger, 1987), a problem that is minimally altered by medication (Liemburg, Knegtering, Klein, Kortekaas, & Aleman, 2012), it is pragmatic that individuals in the treatment team “become the patients’ frontal cortex for them.” To some degree, this is the way case management works in this setting. Case managers are able to guide their patients through life’s problems, anticipate problems for them and help resolve them, in ways that the patients themselves are incapable of doing. In other words, case managers reduce the likelihood of psychosis due to the frontal cortical demand that people with schizophrenia experience. Examples of such case management interventions can

include, “Modified Cognitive-behavioral therapy to reduce the intensity of delusion and hallucinations ...” (Tahan & Treiger, 2017, p. 583).

Case Management Improves Outcomes

Schizophrenia is one of the most expensive illnesses for third-party payors, and one of the most effective way of reducing that cost is to reduce recurrence and rehospitalization (Pennington & McCrone, 2017; Wasylenki, 1994). Intensive case management clearly reduces psychosis recurrence and rehospitalization (Dieterich et al., 2017; Gutierrez-Recacha, Chisholm, Haro, Salvador-Carulla, & Ayuso-Mateos, 2006; Kolbasovsky, 2009). In addition, case management is one of several potential interventions that improve medication adherence (Zygmunt, Olfson, Boyer, & Mechanic, 2002), which also reduces rehospitalization and cost of care (Desai & Nayak, 2019). This is partly because case management addresses the core abnormality in schizophrenia prefrontal cortical dysfunction (Van Veelen et al., 2010; Weinberger, 1987). Interestingly, there appears to be a threshold phenomenon (Marshall, Gray, Lockwood, & Green, 2000), so that intensive case management is clearly more effective than standard case management in reducing rehospitalization, and the more intensive assertive community treatment team is only minimally more effective than intensive case management (Holloway & Carson 1998; Issakidis, Sanderson, Teesson, Johnston, & Buhrich, 1999; Mueser, Bond, Drake, & Resnick, 1998).

Because the frontal cortical demand never really wanes in our society, limiting case management to some artificial period only increases the likelihood of psychotic recurrence in the future (despite the ongoing use of antipsychotics) (Dieterich et al., 2017). Reducing the availability of case management only increases overall cost of managing schizophrenia. This is an important point to understand for clinicians, administrators, and policy makers.

CONCLUSION

The advances in diagnosis and appropriate treatments for patients with schizophrenia have improved greatly over the years by applying the case management care

Each case management intervention is a new opportunity to advance the patient from needing the case manager to problem-solve on his/her behalf to gaining self-control and new abilities, even if a very small step.

“Intensive case management clearly reduces psychosis recurrence and rehospitalization”

plan, incorporating “assessment, monitoring, planning, advocacy and resource utilization” (Tahan & Treiger, 2017, p. 585). No longer is a drug the only answer. The addition of goal-oriented intensive case management in collaboration with the treatment team offers new hope.

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