

Schizophrenia: disorder of the emotional brain

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The prevalent view on the nature of schizophrenia is that it is a neurocognitive disorder, i.e. a dysfunction of the neural and cognitive systems subserving thinking and reasoning, memory, language, attention and perception. Indeed, quantitative reviews have documented large effect sizes for the difference between patients with schizophrenia and healthy comparison subjects on a range of cognitive tests, with probably the largest effect size for memory functioning. However, although cognitive dysfunction is certainly a cardinal feature of schizophrenia, we argue that dysfunction of emotional brain systems may be even more important in understanding the disorder. Indeed, in recent years research on the emotional aspects of schizophrenia is accumulating at a high rate. Here, we review the available evidence regarding behavioral and neural manifestations of abnormal emotional systems in schizophrenia. This evidence comes from cognitive experimental studies using tasks of affect recognition, emotional expression and emotional experience. Furthermore, studies using structural MRI have demonstrated volume reductions of the amygdala, a key structure of the emotional brain. Finally, functional fMRI studies have revealed attenuated response of the amygdala to emotional stimuli. Beyond demonstrating that dysfunction of the emotional brain is a hallmark of schizophrenia, we propose a model that integrates previous neural accounts of emotional abnormalities in schizophrenia, and specifies a neural basis for differential emotional correlates of positive and negative symptoms. Particularly, affective flattening and emotion recognition deficits originate from a structural lesion to the amygdala, whereas increased anxiety and overemotional appraisal of environmental stimuli associated with psychosis arise from hyperactivity of the amygdala due to an imbalance of dopamine systems. The hypothesis of schizophrenia as an emotional disorder also has the potential of elucidating the important sex differences observed in incidence, severity and course of schizophrenia.

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