

Lack of motivation in schizophrenia linked to brain chemical imbalance

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A study of patients with psychotic illnesses such as schizophrenia suggests an alternative explanation for why many sufferers lack motivation. The research is described today BioMed Central's journal *BMC Psychiatry*.

In addition to the hallucinations that often characterize schizophrenia, patients also have major problems with apathy and lack of motivation. The dopamine hypothesis argues that unusual behaviour associated with schizophrenia can largely be explained by variations in the dopamine function of the brain. Exploring a possible link between dopamine activity and the lack of motivation could be key to developing new approaches to helping such patients cope with life.

In a study funded by the National Institute of Health Research, Dr Graham Murray of the Department of Psychiatry at the University of Cambridge and colleagues studied 18 patients presenting with first-episode psychotic symptoms. They compared the patients' performance against 19 healthy participants in a computerised test of motivated behaviour.

The participants took part in a reaction time test, assigning a reward to each trial. In the control group, almost all individuals reacted faster if the potential reward for completing the task was higher. This well documented phenomenon was observed in less than a quarter of the first-episode psychosis group, suggesting an abnormality in the processing of incentives for their actions. Eleven of these participants were taking

atypical antipsychotic medications, which are sometimes thought to be responsible for 'demotivating' patients. However, this study found that these medications had no significant effect on the results.

In the past, some critics have suggested that patients' motivational problems are simply secondary to long-term treatment effects, or institutionalisation, but because the researchers studied young adults at the very early stages of their illness, they could rule out this possibility. "Patients with psychosis already have motivational deficits the first time they present to health services." said Dr Murray. "Understanding the brain basis of these problems will ultimately help in developing new treatments."

The next step in demonstrating a link between lack of motivation and the brain's biochemical reward system will be to investigate whether self-motivation can be safely stimulated in patients with psychoses using medication, including drugs that trigger the release of dopamine but which do not worsen their other symptoms.

Source: BioMed Central

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