

Discuss evidence based on population studies that the negative symptoms of schizo...

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Discuss evidence based on population studies that the negative symptoms of schizophrenia may result from brain damage. Schizophrenia is a well known mental condition in which the patient experiences a breakdown of thought processes along with poor emotional responsiveness. The condition is characterised by a number of symptoms including auditory hallucinations, delusions, randomised thinking, paranoia and disorganised speech. Typically these problems cause a significant amount of dysfunction in the patient's life. Schizophrenia is more common in young adults than other cohorts and displays a global prevalence rate of between 0.3% and 0.7% (van Os & Kapur, 2009). A number of factors have been blamed for the onset of schizophrenia including genetic disorders, neurobiological factors, physiological changes, social processes as well as the patient's early environment. Furthermore, the use of certain recreational and prescription drugs has also been found to affect the development of schizophrenia. It has also been argued that schizophrenia may be the result of damaged mental structures that cause problems in the overall thought process (Picchioni & Murray, 2007). A large amount of research has been carried out into the relationship between schizophrenia and changes in the brain's structure. The most common hypothesis under investigation is the dopamine hypothesis that postulates that psychosis results from the human mind's defective understanding of misfired dopaminergic neurons (van Os & Kapur, 2009). In addition, people suffering from schizophrenia have been found to have significant differences in brain structure in some 40% to 50% of all reported cases. This also alters the brain chemistry especially during the exhibition of acute psychotic states. A number of techniques such as neuropsychological

testing and brain imaging have been applied through function magnetic resonance imaging (fMRI) and positron emission tomography (PET). The basic contention of these tests has been to discover functional variations in mental activity. Results from these scans indicate that significant differences exist in the various brain regions between patients suffering from schizophrenia and normal people. The differences tend to arise in the frontal lobes, the temporal lobes and the hippocampus (Kircher & Thienel, 2006, p. 32). Furthermore, schizophrenic patients have registered decreases in brain volume that are smaller than that for Alzheimer's disease in the temporal lobes as well as the frontal cortex regions. However, as yet it is not clear if these changes in brain volume are progressive or if these exist prior to the onset of schizophrenia (Coyle, 2006, p. 876). Such changes and differences in the human brain have been correlated to schizophrenia through neurocognitive defects (Green, 2006). This also indicates that neural circuits have been changed since brain structure is heavily changed. Certain quarters have argued that schizophrenia should be viewed as a collection of various neurodevelopment disorders rather than as a single problem (Insel, 2010). Here it must be related that schizophrenia may be seen as occurring from brain damage based on the evidence presented above. It can be argued that if a person's brain is damaged for any number of reasons then problems similar to the ones reported above may occur and this could in turn trigger schizophrenia. Research conducted on 45 patients between 1987 and 1997 with head injuries showed the development of negative symptoms associated with schizophrenia. These developments are better known as schizophrenia like psychosis (SLP) and include a few of the classical negative

effects of schizophrenia. The major symptoms being replicated included paranoid delusions, auditory hallucinations as well as accompanying thinking disorders, catatonic characteristics. Most of the studied patients had damages to the left temporal region as well as the right parietal regions. These patients were found to be impaired cognitively while some had onsets of epilepsy too. It must be noted that the research concluded that genetic predisposition was still a greater cause for schizophrenic development than head injury alone (Sachdev, Smith, & Cathcart, 2001). Similarly, other research has pointed out that brain damage could result in consequences that match the consequences of schizophrenia including verbal deficits and thought process problems (Ross, et al., 2001). Previous research had also shown similar results where it was indicated that patients who had experienced brain damage may display results similar to schizophrenia (Buck & Duffy, 1980). Generally the consequences of brain damage and schizophrenia that tend to resemble are related to audio and visual hallucinations, distortions in the thought process and delusions (Levin, Hall, & Knight, 1985). Another major consequence that is common to both brain damage and schizophrenia is the onset of depression especially in the longer run though this may not occur for all patients with brain damage (Borod, Alpert, & Brozgold, 1989). References Borod, J. C., Alpert, M., & Brozgold, A. (1989). A preliminary comparison of ? at affect schizophrenics and brain-damaged patients on measures of affective processing. *Journal of Communication Disorders* 22 , 93-104. Buck, R., & Duffy, R. (1980). Non-verbal communication of aVect in brain-damaged patients. *Cortex* 16 , 351-362. Coyle, J. (2006). The Neurochemistry of Schizophrenia. In G. J. Siegal, R.

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