

Schizophrenia and biological pharmacology essay



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Schizophrenia is characterized “ by impairments in the perception or expression of reality and by significant social or occupational dysfunction” (“ Causes...” 1). “ Most recently the classifications of these medications have been changed based on pharmacology. ” The first generation antipsychotics, second generation anti-psychotics, and third generation anti-psychotics are replacing atypical and typical for new classifications of medications in the treatment of schizophrenia. Schizophrenia is a mental health issues that has long been plagued by stereotypes and severe psychotic symptoms.

Through biological pharmacology it is possible for one’s biological makeup to be changed with medications and therefore the medications can help to affect the person in a positive way. This means that the person is able to use pharmacology in order to make their brains function in a more “ normal” or average way without over stimulation or over production of specific brain chemicals (Jester 162, and 170-187). The brain function in those who are suffering from schizophrenia has been shown to be different through EEGs. In one study the ERPs were measured and what they showed in the end were postsynaptic potentials that represented “ increased or lessened polarization of the neural membrane.

” This was evidenced through scalp electrodes (McCarley 209). The function of the excitatory postsynaptic potentials is to initiate action potentials. The function of inhibitory postsynaptic potentials is to inhibit action potentials. Through biological pharmacology medications can be used to help to stabilize the things that are going on in a person with schizophrenia. The medications can be used to either help initiate when the brain is too inhibited or help to inhibit when the brain is not inhibiting on its own enough.

These both have significant affects on the behaviors associated with those who are suffering from schizophrenia. This means that when the brain is too inhibited the patient may become withdrawn and unable to interact with others as would be appropriate.

When the brain is functioning too quickly and unable to inhibit thoughts the patient may not be able to control his actions and might act out in ways that are not appropriate for the situations that he is currently in (McCarley 218-224). The synapses in the brain when someone has diagnosed schizophrenia is thought to be slowed. This means that through biological pharmacology the brain's synapses can be made to be a more regulated and quicker speed. The evidence is pointing to the slowed synapses as the reasons behind the hallucinations, delusions and confused thinking.

This means that the neurotransmitters are slowed when the patient is suffering from this disorder. Through some pharmaceuticals it is possible to increase the speed of neurotransmitter functions and therefore decrease the amount of hallucinations, delusions and confused thoughts. The receptors are also slowed in this process.

The results of these two things on behaviors are a lack of ability to control oneself and an increased inability to be able to care for oneself on a regular basis. This means that the patient has a harder time with self restraint and with being able to process through certain situations and involvements based on these factors (Leslie 1-4). There are three main categories or neurotransmitters. The first ones are amino acids.

The primary amino acids are glutamic acid, GABA, aspartic acid and glycine. The second ones are peptides. They include primarily vasopressin, somatostatin, and neurotensin. The third and final main category of neurotransmitters monoamines. These include norepinephrine, dopamine and serotonin (Best 1-4). Amino acids are both excitatory and inhibitory neurotransmitters. Glycine is an inhibitory neurotransmitter.

This can affect behaviors by inhibiting how things are and helping to inhibit behaviors. Aspartic acid or aspartame and glutamic acid or glutame are excitatory neurotransmitters. This means that in behaviors it is often this neurotransmitter which can decrease the person's ability to think before reacting or acting. Peptides are both exhibitory and inhibitory. Gamma amino butyric acid or GABA is the major inhibitory neurotransmitter of the brain. The benzodiazepines are used to enhance the effects of GABA and GABA receptors in the brain. This means that there is a pharmaceutical that is on the market able to assist with being able to increase the schizophrenic's ability to inhibit thoughts and actions by increasing the flow of the GAMA and GAMA transmitters.

Acetycholine is almost always exhitory but can be inhibitory. The final main category of neurotransmitters is monoamines. Dopamine and norepinephrine are catecholeamines.

Serotonin is an indolamine (Best, B 4-17). There are many things that are going on with someone who is suffering from schizophrenia. There are times when the person is unable to maintain his or her behaviors because of the

brain functions and the brain's inability to operate in the same manner as it would in a non mentally ill and healthy person.

There are ways that these people can benefit from pharmaceuticals. Through biological pharmacology the schizophrenic patient is able to have more normal brain functions with things with the neurological function of the brain. Some of the known causes for schizophrenia are not completely known and it has been a subject of much debate and diversity. What is known and agreed upon by most experts are that the following factors are considered when someone has schizophrenia: genetics, prenatal development, early environment, neurobiology and psychological and social processes ("Causes..." 1 and 2). There are various types of medications for those who are suffering from schizophrenia.

Antipsychotics are the main treatment option and type of medication for those who are suffering from schizophrenia. Some of the more common and older medications that have been used in the treatment of schizophrenia are Stelazine (Trifluoperazine), Flupenthixol (Fluanxol), Loxapine (Loxapa and Loxitane), Perphenazine (Etrafon and Trilafon), Chlorpromazine (Thorazine), Haldol (Haloperadol), and Prolixin (Fluphenazine Deconate, Modecate and Permitil). Some of the newer or atypical antipsychotics that are used to treat schizophrenia. These include Aripiprazole (Abilify), Clozaril (Clozapin), Geodon (ziprasidone), Risperdol (resperidone), Seroquel (quetiapine), and zyprexa (olanzapine) ("Schizophrenia..." 1-3). Schizophrenia is a major mental illness that affects many people. Through biological pharmacology one who is suffering from schizophrenia is able to find some medications that

can greatly assist him/her with not having the symptoms and problems associated with the schizophrenia disorder.

The above medications are what are typically prescribed for those suffering from schizophrenia however there can be variations with these or with other medications. Finding a way to control the brain through biological pharmacology makes it possible for the schizophrenic patient to have the most comfortable and least problematic life possible (“ Causes...” 1-4 and “ Schizophrenia...” 1-3).