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Psychological Disorders: What We Know

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Psychology as a Natural Science T Th 12pm

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There is a multitude of psychological disorders affecting the brain identified by an even greater amount of symptoms and signs. Unfortunately, for some diseases or disorders not enough is known to make meaningful and complete breakthroughs in regard to effective treatments or cures. Due to extensive experiment and biological as well as hereditary research, the scientific community has learned a lot about certain brain disorders, and how to treat them. Five of such disorders are chronic traumatic encephalopathy, narcolepsy, tourettes, schizophrenia and Huntington's disease. Each disorder has its' own unique symptoms, development and treatment. Some are inherited and some develop, but all are serious brain disorders that are constantly being researched and analyzed. As more information about these disorders surfaces, treatments could change along with previously accepted knowledge.

The first disorder, chronic traumatic encephalopathy (CTE) is a problem commonly present in athletic leagues, with the National Football League at the center of it all. CTE is a degenerative brain disorder caused by traumatic head injuries, especially repeated concussions. Many professional athletes and veterans deal with CTE late in life due to previous traumatic experiences in their professions. There are four major stages in the development of chronic traumatic encephalopathy getting more severe as the stages progress. The first stage is classified by often headaches, short term memory loss and lack of concentration. Stages two and three consist of furthered memory loss and extreme mood swings and eventually can be declared

cognitively impaired. Stage four, the most severe, progresses into extreme dementia and declining motor skills (The CTE Society, 2017). Real symptoms and signs usually don't develop until an individual in their twenties or thirties. When it comes to diagnosis of CTE, most of the cases are diagnosed post mortem by analyzing the brain tissues. This makes it difficult to get an early diagnosis and meaningful treatment, even if there aren't many treatments to begin with. *"In severe TBI (Traumatic Brain Injuries), supportive measures such as controlling brain swelling using osmolar therapy or barbiturates, and/or surgical interventions remain the standard of care"* (Kochanek, 2016). There are few reliable techniques and targeted therapies used for traumatic brain injuries and CTE, but extensive research is being done with this problem being shoved into the national spotlight for the time being.

A second brain disorder is a chronic sleeping disorder called narcolepsy. Narcolepsy is a chronic neurological condition where the brain can not control normal sleep-wake cycles. This disorder is characterized by excessive involuntary sleeping and often results in sleep paralysis and even hallucinations. Individuals are diagnosed with narcolepsy after partaking in a physical examination and many sleep studies, as well as a look into past medical history (Love, 2017) According to the most recent research, narcolepsy is caused by an extreme loss of hypocretin in the brain. Hypocretin is a chemical in the brain that actively regulates sleeping cycles, causing trouble with staying awake and sporadic sleeping patterns (National Sleep Foundation, 2018). There is no known cure for the drastic decrease in hypocretin, but there are numerous medications available and behavioral temperaments are proven to help lessen many of the symptoms of the disorder. This disorder is not as common as others, occurring in about 1 of every 2,000 people (National Sleep Foundation, 2018), but is still very prevalent in modern

research and investigation. Narcolepsy is found equally in men and women, but there is a difference in when the diagnoses occurs. 85% of men with narcolepsy were diagnosed by the time they were sixteen years old, while the age for that same 85% of women is 28 years old (Mahmoudi, 2014). Hopefully better treatments will arise as more research is done.

Huntington's disease(HD) is a hereditary condition caused by the progressive breakdown of nerve cells in a person's brain (Mayo Clinic Staff, 2018). This disease typically develops in the thirties or forties, later in an individual's lifespan. Juvenile Huntington's disease is also possible which is when it develops around the age of twenty. If there is a family history of Huntington's, predictive genetic testing can be done to diagnose the disease. Huntington's usually results in cognitive and movement disorders including dystonia and speech difficulties. Huntington's disease is caused by an inherited defective HTT gene. The gene is defective due to a mutation involving a CAG DNA segment (Genetics Home Reference, 2013). Unfortunately, there is no cure for Huntington's disease, only certain medications that can help with emotional and physical problems caused by HD (Dr. McCusker, 2018).

Schizophrenia is a mental disorder causing an abnormal interpretation of reality including hallucinations and disordered thought. Delusions are very common, and in many cases false beliefs of danger arise when there is no harm present. Disorganized and unorganized thought is very common and carries over into speech, essentially disabling coherent responses(Mayo Clinic Staff, 2018). Sometimes a diagnoses may be difficult because those suffering from schizophrenia may be unaware of their situation due to delusions replacing reality. Once the diagnosis is complete, however, there are many lifelong medications available and necessary to help cope with delusions (NIMH, 2018). It is not exactly known what the cause of schizophrenia is, but

both genetics and brain chemistry play a role in the development of this disease. Defects with the generation of chemicals in the brain such as dopamine and glutamate are likely a contributing factor in the development(Mayo Clinic Staff, 2018). These problems in brain chemistry point towards schizophrenia being defined as a brain disease.

Tourettes syndrome (TS)is a brain disorder characterized by involuntary movements and vocalizations. Defined as a “Tic Disorder”, tourettes involves at least one vocal and one physical tic (Tourette Association of America, 2018). These ticks develop over time and usually start in the neck and head area. There is evidence from twin and family studies that shows that tourettes is more complicated than simply an autosomal dominant inheritance. Patients are diagnosed after living with a vocal and physical tic for over a year. Genetic studies also show that some forms of ADHD and OCD are related to TS (NINDS, 2012). There are medications to suppress tics available for use, but many patients do not require medication because the tics do not impair them in any other way. TS is not a degenerative condition and in some cases, the symptoms improve as the patient ages into late teens and early twenties. Many cases of tourette's can be managed or suppressed but, in an educational setting, are often paired with other children with learning disabilities(NINDS, 2012).

Schizophrenia, tourette's, CTE, Huntington’s and narcolepsy are all serious brain disorders that are being constantly researched and investigated. Many new discoveries are made expanding our already immense knowledge of mental diseases and brain disorders in general. Foundations and individual donors help scientific investigation run its’ course, and continue to play an active role in treatment efforts. We have a vast amount of knowledge and information regarding these disorders, and there are new advances in the field every day.

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