

Causes

#OCD and Learned Behaviour: derived from Mowrer's two process theory of avoidance learning. Neutral stimuli become associated with frightening thoughts or experiences through classical conditioning and come to elicit anxiety. Once having made this association, the person may discover that the anxiety can be reduced by a specific behavior. Doing this ritual just makes it stronger and very resistant to extinction.

#Preparedness: evolutionary context of fears may be adaptive to our early ancestors. For example: fear of contamination. The same behavior is visible also in animals.

#Cognitive casual factors:

The effects of attempting to suppress obsessive thoughts. Attempting to suppress thoughts can paradoxically increase them. People with normal and abnormal obsessions differ primarily in the degree to which they resist their own thoughts and find them acceptable. OCD patients indeed do it much more than normal people although it is not affective.

Appraisals of responsibility for intrusive thoughts. Inflated sense of responsibility. Beliefs that simply having a thought about doing something is morally equivalent to actually doing it. "Thought-action fusion".

Cognitive Biases and distortions- their attention is drawn to disturbing material relevant to their obsessive concerns- like in other anxiety disorders. They have difficulty in blocking out negative irrelevant input or distracting information, so they attempt to suppress these thoughts.

#Biological factors:

Genetic Factors: Twin studies: high concordance rate for monozygotic twins and a lower one for dizygotic twins. Family studies: 3 to 12 times higher rates of OCD in first degree relatives.

One type of OCD- starts in childhood and is characterized by chronic motor tics is strongly linked to Tourette syndrome.

Moreover- molecular genetic studies: different genetic polymorphism (naturally occurring variations).

OCD and the Brain: Abnormalities occur primarily in certain cortical structures as well as in certain subcortical structures as the Basal Ganglia. Which is linked at the amygdala to the limbic system which controls emotional behavior. Pet scans show high abnormal activity in two parts of prefrontal cortex: orbital frontal cortex and the cingulate cortex. Also high activity in caudate

nucleus and basal ganglia. These primitive structures are involved in executing primitive patterns of behavior: sex aggression and hygiene concerns. Primitive thoughts in orbital frontal cortex → filtered by caudate nucleus allowing only the strongest ones to pass to the thalamus. This circuit is responsible for behavioral responses.

##Neurotransmitter abnormalities: Clomipramine affects neurotransmitter serotonin which is strongly implicated with OCD. Also, other drugs from the SSRI family.

Increased serotonin activity and increased sensitivity of some brain structures to serotonin are involved in OCD symptoms. Clomipramine- at first increases serotonin and then lowers it. It's also becoming clear that dysfunction in serotonin is not enough to explain OCD. It can be also dopaminergic, GABA and glutamate systems.

Treatments

#Exposure and response prevention: involves having the client develop hierarchy of upsetting stimuli and rate them from 0 to 100 scale. Then the client is asked to expose themselves repeatedly to stimuli that will provoke their obsessions. Following each exposure they are asked to not engage in their rituals. Many drop out but the ones who stay show 50-70% of reduction of the symptoms. These results considered superior to medications.

#Family Therapy: Family Accommodation Behaviors are things families do that enable OCD symptoms. Families are constantly affected by the demands of OCD. Research shows that how a family responds to the OCD may help fuel OCD symptoms.

#Medications: Medications that affect the neurotransmitter Serotonin seem to be the primary class of medication. Anti-depressant drugs as Clomipramine and fluoxetine (Prozac), which alter functioning of the serotonin system, appear to reduce the intensity of the symptoms. Those who don't respond to that- a small dosage of anti-psychotic drugs may help. The major disadvantage is: when medication is discontinued, relapse rates are generally very high. Combining medication with psychological therapy is more helpful than the therapy only..

Gamma knife radiosurgery is a treatment for OCD that does not require opening the skull. In gamma knife procedures, multiple gamma rays pass through the skull. On its own, a single gamma ray poses no danger to brain tissue. However, when gamma rays intersect, the energy level is high enough to destroy the targeted brain tissue. The most recent version of this procedure is called gamma ventral capsulotomy. This is because the procedure is limited to the ventral (bottom) half of

a brain area called the anterior capsule. About 60% of those who did not respond to behavior therapy or medicines for OCD got some benefit from the procedure.

Repetitive transcranial magnetic stimulation (rTMS) We tested whether low-frequency repetitive transcranial magnetic stimulation (rTMS) could normalize overactive motor cortical regions and thereby improve symptoms. Suggestions of clinical improvement were apparent as early as the first week of rTMS. We report a clinically significant improvement in OCD and TS symptoms with benefits lasting up to 3 months in almost two thirds of the patients, similarly to that reported with conventional treatments.

Deep Brain Stimulation: This intervention is only for individuals who do not respond well to behavior therapy or medicines for OCD.
What is deep brain stimulation (DBS)?

- DBS has been used since the mid 1980s to treat the symptoms of movement disorders such as Parkinson's disease.
- DBS involves placing electrodes in targeted areas of the brain. Once the electrodes are in place, they are connected by wires under the skin to pulse generators under the skin (usually just below the collarbone).

Surgery: Anterior cingulotomy – This is a brain surgery that involves drilling through the skull and using a heated probe to burn an area within a part of the brain called the anterior cingulate cortex.

Anterior capsulotomy - This procedure is very similar to the surgery listed above. However, in this surgery, doctors operate on a different part of the brain, called the anterior limb of the internal capsule.