The Biomedical Therapies

Module 54

Therapy

The Biomedical Therapies
- Drug Therapies
- Brain Stimulation
- Psychosurgery

Preventing Psychological Disorders
The Biomedical Therapies

Include physical, medicinal and other forms of biological therapies.

1. Drug Treatments
2. Surgery
3. Electric-shock therapy

Drug Therapies

Psychopharmacology is the study of drug effects

With the advent of drugs, hospitalization in mental institutions has rapidly declined.

OBJECTIVE 54-1 Define psychopharmacology, and explain how double-blind studies help researchers evaluate a drug’s effectiveness.

Drug Therapies

However, many patients are left homeless on the streets due to their ill-preparedness to cope independently outside in society.
Double-Blind Procedures

To test the effectiveness of a drug patients are tested with the drug and a placebo, in which two groups of patients and medical health professionals are kept blind to who got the drug and who got the placebo.

Schizophrenia Symptoms

<table>
<thead>
<tr>
<th>Inappropriate symptoms present (positive symptoms)</th>
<th>Appropriate symptoms absent (negative symptoms)</th>
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<tr>
<td>Hallucinations, disorganized thinking, deluded ways.</td>
<td>Apathy, expressionless faces, rigid bodies.</td>
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Antipsychotic Drugs

Classical antipsychotics [Chlorpromazine (Thorazine)]: Remove a number of positive symptoms associated with schizophrenia, like agitation, delusions and hallucination.

Atypical antipsychotics [Clozapine (Clozaril)]: Remove negative symptoms associated with schizophrenia, like apathy, jumbled thoughts, concentration difficulties, difficulty in interacting with others.

OBJECTIVE 54-2 | Describe the characteristics of antipsychotic drugs, and discuss their use in treating specific disorders.
Atypical Antipsychotic

Clozapine (Clozaril) blocks receptors for dopamine and serotonin to remove the negative symptoms of schizophrenia.

Antianxiety Drugs

Antianxiety drugs (Xanax and Ativan) depress central nervous system and reduce anxiety and tension by elevating the levels of the Gamma-aminobutyric acid (GABA) neurotransmitter.

Antidepressant Drugs

Antidepressant drugs like Prozac, Zoloft, and Paxil are Selective Serotonin Reuptake Inhibitors (SSRIs) and improve mood by elevating the levels of serotonin by inhibiting reuptake.

OBJECTIVE 54-3 | Describe the characteristics of antianxiety drugs, and discuss their use in treating specific disorders.

OBJECTIVE 54-4 | Describe the characteristics of antidepressant drugs, and discuss their use in treating specific disorders.
Mood-Stabilizing Medications

Lithium Carbonate a common salt has been used to stabilize manic episodes in bipolar disorders. It moderates the levels of norepinephrine and glutamate neurotransmitters.

Brain Stimulation

Electroconvulsive Therapy (ECT)

ECT is delivered to severely depressed patients who do not respond to drugs. The patient is anesthetized and is given a muscle relaxant. Patients usually get a 100 volt shock that relieves them of depression.

Alternatives to ECT

Transcranial Magnetic Stimulation (TMS)

In TMS, a pulsating magnetic coil is placed over prefrontal regions of the brain to treat depression, with minimal side effects.

OBJECTIVE 54-5 Describe the use and effects of mood-stabilizing medications.

OBJECTIVE 54-6 Describe the use of electroconvulsive therapy (ECT) in treating severe depression, and describe some possible alternatives to ECT.
Psychosurgery

Psychosurgery was popular even in Neolithic times. Although used sparingly today, about 200 such operations do take place in the US alone.

OBJECTIVE 54-7| Summarize the history of the psychosurgical procedure known as lobotomy, and discuss the use of psychosurgery today.

Psychosurgery

Psychosurgery is used as a last resort in alleviating psychological disturbances. Psychosurgery is irreversible. Removal of brain tissue changes the mind.

Modern methods use stereotactic neurosurgery and radiosurgery (Laksell, 1951) that refine older methods of psychosurgery.