Psychopathology: Biological Basis of Behavioral Disorders

Chapter 16

Psychopathology

A field of inquiry that studies the causes, symptoms and prognosis of psychological disorders.

A relatively complex field that includes a multidiscipline approach to understanding mental diseases and treating them.

Psychological Disorder

A “harmful dysfunction” in which behavior is judged to be:

1. **Atypical**: A behavior not typically observed. Running naked, Transvestites.
2. **Disturbing**: A behavior that disturbs others. Antisocial behavior.
3. **Maladaptive**: A harmful behavior. Nicotine or other drug dependence.
4. **Unjustifiable**: An irrational behavior. Hearing phantom voices.
Statistics on Mental Disorders

1. One-third of US population at one time or another suffers from symptoms that resemble psychiatric symptoms.
2. Men and women in general are comparable as far as mental diseases are concerned. There however differences in some disorders like depression is higher in women than men. Drug abuse and alcoholism is higher in men.
3. Some diseases are contracted early on in life. Depression and antisocial behavior (25-44 years) and cognitive impairment around 65 years of age.

Statistics on Mental Disorders

<table>
<thead>
<tr>
<th>Disorders</th>
<th>Rate (%)</th>
<th>Prevalence 6 months</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any psychiatric disorder covered</td>
<td>19.1</td>
<td>32.2</td>
<td></td>
</tr>
<tr>
<td>Substance use disorders</td>
<td>6.0</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>Alcohol abuse or dependence</td>
<td>4.7</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>Drug abuse or dependence</td>
<td>2.0</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>0.9</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Affective disorders</td>
<td>5.8</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>Manic episode</td>
<td>0.5</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Major depressive episode</td>
<td>3.0</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Minor depression</td>
<td>—</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>8.9</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td>Phobia</td>
<td>7.7</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>Panic</td>
<td>0.8</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Obsessive-compulsive disorder</td>
<td>1.3</td>
<td>2.3</td>
<td></td>
</tr>
</tbody>
</table>

History of Mental Disorders

Movements of sun or moon led to madness or invasion of evil spirits.

Ancient Treatments: Trephination, exorcism, caged like animals, beaten, burned, castrated, mutilated, blood replaced with animal’s blood.
Evil Spirits

Skull found from Neolithic times. Trephination for removing evil spirits.

Medical Model

Abnormal behavior is like any other physical disease. Medical field provided a better platform for the mentally ill than psychology.

Hideyo Noguchi (1911) showed a clear relationship between syphilis and psychosis. This led other researchers to start looking at other possible physical causes to mental disorders.

Medical Model

1. **Diagnosis**: distinguishing one disease from another.
2. **Etiology**: Causation and developmental history
3. **Prognosis**: Forecast about the illness
Stereotypes

1. **Incurable**: Untrue. Great many people are cured.
3. **Bizarre behavior**: Untrue. Majority of mentally sick do not show bizarre behavior.

Rosenhan (1973)

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Mental Illness: Diagnosis

Before 1952

Diagnostic and Statistical Manual of Mental disorders (DSM)

- DSM-II (1968)
- DSM-III (1980)
- DSM-IV (1994)

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Mental Illness: Multiaxial System

DSM-III (1980)

I. Clinical syndromes
II. Personality disorders and mental retardation
III. General medical conditions
IV. Psychosocial and environmental problems
V. Global assessment of functioning (GAF)
Mental Illness: Epidemiology

Prevalence of mental disorders. Lifetime prevalence: enduring a disorder many times in life.

20% population suffers from mental disorders (Before DSM-III)

After DSM-III estimates run around 33%.

Dementia Praecox

Emil Kraepelin was German psychiatrist who first identified and labeled schizophrenia and named it as dementia praecox.

Kraepelin identified a number of symptoms associated with the disease, including paranoia, delusions, hallucination etc.

1856-1926
Schizophrenia

Contemporary of Kraeplin, Eugan Bleuler (Swiss) named the disease schizophrenia made up of Schizein (to split) phren (mind). Wrote a book Dementia Praecox; or The Groups of Schizophrenias (1911) and identified dissociative thinking a key symptom in the disease.

Positive & Negative Symptoms

<table>
<thead>
<tr>
<th>Positive symptoms</th>
<th>Negative symptoms</th>
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<tbody>
<tr>
<td>Hallucinations, most often auditory</td>
<td>Social withdrawal</td>
</tr>
<tr>
<td>Delusions of grandeur, persecution, etc.</td>
<td>Flat affect (blunted emotional responses)</td>
</tr>
<tr>
<td>Disordered thought processes</td>
<td>Anhedonia (loss of pleasurable feelings)</td>
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<tr>
<td>Bizarre behaviors</td>
<td>Reduced motivation, poor focus on tasks</td>
</tr>
<tr>
<td></td>
<td>Alogia (reduced speech output)</td>
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<tr>
<td></td>
<td>Catatonia (reduced movement)</td>
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</tbody>
</table>

Positive symptoms: Abnormal behaviors gained
Negative symptoms: Normal behaviors lost

Genetic Factors

There is a strong genetic component to schizophrenia and concordance studies have shown that schizophrenia can be inherited.
Brain Differences

Ventricular size in schizophrenic patients is larger than control. This difference is more marked in males than females.

Brain Differences

In about 75% of discordant pairs size of the hippocampus and amygdala is smaller in schizophrenic patients. Also hippocampal neurons show more disorganization in schizophrenic patients than controls.

Cortical Loss

Schizophrenic patients show a continued loss of cortical mass during early and late adolescent development compared to normal individuals.