Outline

• What is an “abnormal” behavior or mental process?
• Examine the nature and treatment of three quite different mental disorders:
  – Schizophrenia
  – Depression
  – Anti-social personality disorder

Diathesis-stress model of mental disorders

• Diathesis: Set of risk factors
• Stress: Set of trigger factors
• The disorder arises when both are present
  – An example of an interaction of two factors:
    • The effect of one factor depends on the level of the other factor

Depression

• A mood disorder that involves:
  – Disabling sadness, hopelessness, apathy
  – Loss of pleasure, motivation
  – Disturbances of sleep, diet, experience of pleasure
• Lifetime prevalence:
  – 7%-12% in men
  – 20%-25% in women

Clinical depression

• Multiple factors can play a role:
  – Environmental
  – Cognitive
  – Biological
• Any factor can be:
  – Diathesis or stress
  – A target for intervention

A cognitive factor

• Negative explanatory style
  – Attributing bad experiences to internal, global, and stable causes
    • Internal: It’s my fault (not someone else’s)
    • Global: I do everything wrong
    • Stable: I always will
• One intervention: cognitive-behavioral therapy
  – Changes patterns of thinking and behavior

Possible biological factors

• Unknown factors
  – Treated through electroconvulsive therapy (ECT)
    • A last resort for intractable depression
• Serotonin imbalance
  – Treated with antidepressant drugs (e.g., Prozac)
    • But actual drug effects may be small
• Disregulated activation in specific brain areas
  – Treated with deep-brain stimulation
Challenges in evaluating depression therapy

- Placebo effects
  - Placebo: An inert or sham therapy that helps because the patient believes it will help
  - Can alleviate negative cognition
- Spontaneous remission
  - Nonclinical depression lifts by itself
  - If Bob starts treatment when he is depressed, and gets better, was it the treatment, or remission?

Regression to the mean

- Spontaneous remission is an example of regression to the mean
- Regression to the mean occurs when:
  1. A group is defined by extreme values on a variable, and
  2. That group is measured on the same variable again, later
  An important confounding variable

Regression to the mean

- Students who perform poorly on a test are selected for a remedial education program
  - The group’s mean score improves on a later test
  - Possible explanations:
    - The program worked
    - Some students had a bad day on the first test

Regression to the mean

- Students who perform well on a test are admitted to a selective college
  - In college, they show a sophomore slump
  - Explanations:
    - Early success reduces subsequent effort
    - Some students had a good day on the test

Regression to the mean

- An instructor notices a pattern: People she singles out for praise go on to screw up
  - Explanations:
    - Praising people causes them to try less hard
    - People who earned praise were having a good day

Evaluating antidepressants

(Kirsch & Sapirstein, 1998)

- Research question: How big is the drug effect, relative to spontaneous remission and placebo effects?
  - Used meta-analysis: A study of studies
- 19 pharmacological studies, each with:
  - Pre/post, double-blind design
  - Placebo control group
- 19 psychotherapy studies, each with:
  - Pre/post design
  - A wait-list or no-treatment control group
Evaluating antidepressants

- The active drug accounted for only 25% of total improvement in active drug conditions
  - The rest was spontaneous remission and placebo effects
- Kirsch attributes the 25% to publication bias
  - Studies that don’t show results don’t get published

Deep brain stimulation

- Area 25
  - Forebrain
  - Midbrain
  - Hindbrain

How it might work

- Stimulating white matter can deactivate nearby grey matter
- Area 25 is connected to other brain regions:
  - frontal lobes (cognition), hypothalamus (appetite), brain stem (sleep), insula (emotion, pain)
- Mixed results since the 2005 studies
  - In trials with stimulation vs. sham controls