Mental Retardation
Introduction

History's influence

Dual Diagnosis

Etiology

Specific Disorders
Many hindering elements – Death – Persecution!

Religion!

Middle Ages Led to general lack of concern
History Cont…

1690 John Locke's “Blank Slate”

1800s Jean-Marc-Gaspard Itard

1908 Binet's IQ test

Led to better understanding of innate differences

Gave hope for help
History’s influence on Diagnosis

1900s: general knowledge about mental retardation widespread: – “Onset in childhood, significant intellectual or cognitive limitations and inability to adapt to the demands of everyday life”

But diagnostic criteria vague
American Association on Mental Deficiency (AAMR) defined according to functional level:

- Idiot: 2 year old
- Imbecile: 2-7 year old
- Moron: 7-12 year old

Obvious problems
Revisions based on IQ

- Overlaps cause overestimation

New IQ levels established

- Mild: 50-70
- Moderate: 35-50
- Severe: 20-35
- Profound: <20

STILL too vague
Current Diagnostic Criteria

- Multidimensional approach (DSM-IV, ICD10)
- Limits in present functioning
- Sub-average IQ
- 2 or more: Communication, self-care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure, and work
Dual Diagnosis - Theory that mental retardation exists in conjunction with psychopathologies. Psychopathologies are not innate qualities, rather they are developed.
The slow development of diagnostic criteria hindered research for centuries. New approaches and techniques – etiological approaches, genetic and biological findings related to behavior, biosocial.
Etiology

2 Types:
- Idopathic: non-specific: no apparent cause
- Organic: specific
  - Pre-natal: chromosome abnormality
  - Peri-natal: hypoxia, apoxia
  - Post-natal: brain injury
Most retardation is mild!

Most cases of mild retardation are combinations of peri- and post-natal causes!

20-30% of pre-natal causes lead to severe retardation!
Specific genetic effects that cause breakthrough research – Genetics and psychology coupled with biology.
Both chromosome 15
– WP=paternal, affects mRNA processing
– AS=maternal, affects ubiquitin ligase gene that is crucial in development

Both syndromes from same location

Very different behavioral characteristics
Willi-Prader Syndrome
– Hyperphagia and impaired satiety
Leads to food-stealing and seeking
– OCD (similar to non-retarded)
– Behaviors: tantrums, outbursts, impulsivity, argumentativeness, sadness, withdrawal, and peer problems*

Due to disorder?? Or part of it?
Angelman Syndrome

– Moderate retardation, abnormal gait, speech impairment, seizures, and inappropriate happy demeanor*

– Needs further study
Implications

Good Willi's biological start

Some good psychological correlations

Research needed to find biological abnormalities related to behaviors

And also specifying differences in maternal and paternal etiology
William's Syndrome

- Chromosome 7: next to elastin gene, connective tissue disorder
- Anxiety disorders unrelated to age or gender

– Environment? Or genetic?
Behavior: Inattention, hyperactivity, ADHD, impulsivity, and social disinhibition

Language: visual-spatial, visual-motor, construction tasks, or figure copying

Strengths: memorizing and recognizing faces, auditory short-term memory, and musical talents
Implications

Good advocate for dual diagnosis

Need research on biological aspects
Expanded triplet repeat – 200+ CGGs

Inactive FMR1 gene (lack gene product FMR1P)

– Essential for pre- and post-natal development
– Regulates proteins for synaptic activity
Repeats increase each generation until the X Chromosome becomes 'fragile' at a critical region when examined by scientists. Not hereditary, chromosome abnormality.
Three Types

- Males with full mutations
  - Mild to moderate IQ, intact verbal abilities
  - Struggle with short-term memory, audio, verbal, and perceptual tasks

- Mosaic Males (partial FMR1P)
  - Higher IQ, moderate symptoms

- Females
  - Least symptoms (X-inactivation)
Studies have found:
- Enlarged caudate nucleus
  Inhibition, motor activity, and environmental responses
- Decreased cerebellar vermis size in males
  Inattention, hyperactivity, hypersensitivity to stimuli
Since the discovery in 1991, enormous amounts of research has linked:
– FMR gene with FMR1P production
– FMR1P effect on symptoms
– Biological abnormalities that account for symptoms

Pioneering research must continue
Conclusion

Fears:
- Eugenics
- Prejudice
Conclusions Cont…

Research techniques incorporate 3 important fields:
- Biology
- Psychology
- Genetics

Non-invasive way to research


MERCK MANUAL http://www.merck.com/mrkshared/mmanual_home/sec23/255.jsp

ERIC Digests http://www.ericfacility.net/ericdigests/ed372593.html: 3/22/03
