Adaptive Functioning and Intellectual Ability

Don Salmon, M.A., Psychological Associate
Thurs, Oct 27, 2011

Learning Objectives
1. Describe the relationship between adaptive functioning and ID
2. Identify the components of intelligence testing
3. Identify the factors that affect intelligence
4. Definition of Adaptive Behaviour
5. Identify the domains of Adaptive Behaviour
7. Identify the conditions that affect adaptive functioning

Adaptive Behaviour & Intellectual Ability
- Both are used for identification
- Both are used for program planning
- Impairments in Adaptive Functioning > “Low IQ” concern for an individual
What is Intelligence?

- WE DON’T KNOW! (Sternberg, Grigorenko, and Kidd, 2005)
- Genotype:
- Phenotype:
- "Test Intelligence"

What is Measured & Why?

- No universal definition
- Different tests = different results
- What is a “normative” group
- Complex process
- Many factors affect performance
- Relatively stable
- Correlation between IQ and success
What do IQ Tests Do?

- Designed to measure general ability to solve problems and understand concepts.
- Visual-Spatial ability
- Problem-Solving (Thinking) ability
- Language ability
- Memory ability
- Processing

What Factors Impact Intelligence or IQ Scores?

- Economic status: Childhood development, Parental education
- Cultural variables: Personal interactions, Expected reactions
- Societal Expectations: Opportunities, Community
- Other Factors: Personal, Testing Situation

Standard IQ Score Ranges

<table>
<thead>
<tr>
<th>Standard Score</th>
<th>Classification</th>
<th>Relation To Average</th>
<th>Percentile</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 and above</td>
<td>Very Superior</td>
<td>Above +2</td>
<td>Above 98th</td>
<td>1 in 50 above 132</td>
</tr>
<tr>
<td>120 - 129</td>
<td>Superior</td>
<td>Within +1.5 to +2 SD</td>
<td>90th to 98th</td>
<td>1 in 10 above 120</td>
</tr>
<tr>
<td>110 - 119</td>
<td>High Average</td>
<td>Within +1 to +1.5 SD</td>
<td>75th to 90th</td>
<td>1 in 5</td>
</tr>
<tr>
<td>90 - 109</td>
<td>Average</td>
<td>Within -1 to +1 SD</td>
<td>25th to 75th</td>
<td>1 in 2</td>
</tr>
<tr>
<td>80 - 89</td>
<td>Low Average</td>
<td>within -1 to +1.5 SD</td>
<td>16th to 25th</td>
<td>1 in 10 between 80</td>
</tr>
<tr>
<td>70 - 79</td>
<td>Borderline</td>
<td>Within -1.5 to -3 SD</td>
<td>3rd to 16th</td>
<td>3 between 69 &amp; 75</td>
</tr>
<tr>
<td>60 - 55</td>
<td>Mild Intel. Ds.</td>
<td>Within -2 to -2.5 SD</td>
<td>2nd to 3rd</td>
<td>1 in 20 below 75</td>
</tr>
<tr>
<td>54 – 55</td>
<td>Moderate I.D.</td>
<td>Within -2.5 to -3 SD</td>
<td>0.1 to 0.1</td>
<td>1 in 100 below 54</td>
</tr>
<tr>
<td>44 – 40</td>
<td>Severe I.D.</td>
<td>Within -3 to -3.5 SD</td>
<td>Below 0.1</td>
<td>Less than 1 in 200</td>
</tr>
<tr>
<td>Below 40</td>
<td>Profound I.D.</td>
<td>3.5 and below</td>
<td>Less than 1 in 1000</td>
<td></td>
</tr>
</tbody>
</table>
What is Adaptive Behaviour?

- Adaptive behavior refers to:
  - The quality of everyday performance in coping with environmental demands
  - Adaptive behaviour refers to what people do to take care of themselves and to relate to others in daily living

- Concept - first defined in the 1959 AAMR definition of Mental Retardation (Heber, 1959)
  - Further defined in 1983 in DSM, as follows:

DSM-IV CRITERIA

"A particular state of functioning that begins in childhood and is characterized by limitations in both intelligence and adaptive skills."

Limitations in two or more areas of adaptive functioning:
- Communication skills
- Home living skills
- Community skills
- Health and safety
- Leisure time
- Self care skills
- Social skills
- Self direction skills
- Functional academic and/or work skills

Measuring Adaptive Functioning

- Communication Domain
  - Receptive skills
  - Expressive skills
  - Written skills
Measuring Adaptive Functioning

- **Daily Living Skills Domain**
  - Personal
  - Domestic
  - Community

Measuring Adaptive Functioning

- **Socialization Domain**
  - Interpersonal Skills
  - Leisure Skills
  - Work Skills
  - Coping Skills

Measuring Adaptive Functioning

- **Motor Skills Domain**
  - Gross Motor & Fine Motor Skills
    - Ages 0 – 5yrs
      - Strength and weakness
    - Ages 6 – 79
      - Physical concern
Interpreting Performance

- Adaptive Levels
  - Descriptive categories
    - "non-technical" terms
  - Standard Scores & Percentiles
    - Standardized
    - Statistically based

Borderline Intellectual Functioning V62.89

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ)</th>
<th>Ability at Preschool Age (Birth to 6 Years)</th>
<th>Ability at School Age (6 to 20 Years)</th>
<th>Ability at Adult Age (21 Years and Older)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ Range = 71 to 84</td>
<td>- not significantly different</td>
<td>- Poorer academic performance/behavioral problems</td>
<td>- Adaptive function varies</td>
</tr>
<tr>
<td>May or may not be combined with lower adaptive ability</td>
<td>- may have behavioral concerns</td>
<td>- Cognitive functioning more limited</td>
<td>- Academic or occupational achievement limited</td>
</tr>
<tr>
<td>7% of population</td>
<td>- increased difficulty in demanding or unfamiliar environments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Mild Intellectual Disability

**– AXIS II - 317**

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ) Range</th>
<th>Ability at Preschool Age (Birth to 6 Years)</th>
<th>Ability at School Age (6 to 20 Years)</th>
<th>Ability at Adult Age (21 Years and Older)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q. Range = 50-69</td>
<td>Late Diagnosis</td>
<td>Grade 6 literacy</td>
<td>Usually self-support</td>
</tr>
<tr>
<td>M.A. = 8 – 11</td>
<td>Average social</td>
<td>Basic social skills, not all</td>
<td>Guidance may be needed</td>
</tr>
<tr>
<td>2.7% pop</td>
<td>Delayed milestones</td>
<td>Limited problem solving ability</td>
<td>Learned or instinctive responses</td>
</tr>
<tr>
<td>Approx 85% of those with an I.D.</td>
<td>Communication lower</td>
<td>Difficulty with abstract concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coordination impaired</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Late Diagnosis
- Average social
- Delayed milestones
- Communication lower
- Coordination impaired

### Moderate Intellectual Disability

**– AXIS II - 318**

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ) Range</th>
<th>Ability at Preschool Age (Birth to 6 Years)</th>
<th>Ability at School Age (6 to 20 Years)</th>
<th>Ability at Adult Age (21 Years and Older)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.Q. Range = 55 to 70</td>
<td>Basic communication</td>
<td>Limited adaptive skills</td>
<td>Some degree of self-support</td>
</tr>
<tr>
<td>M.A. = 5.5 – 8 yr</td>
<td>Poor social awareness</td>
<td>Structured &amp; repetitive training</td>
<td>Increased need for guidance when under stress</td>
</tr>
<tr>
<td>0.2% pop</td>
<td>Milestones</td>
<td>Limited academic progress</td>
<td>Increased supervision</td>
</tr>
<tr>
<td>About 10% of persons with I.D.</td>
<td>Fair motor coordination</td>
<td>Limited independence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional self-help supports</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Basic communication
- Poor social awareness
- Milestones
- Fair motor coordination
- Additional self-help supports

- Limited adaptive skills
- Structured & repetitive training
- Limited academic progress
- Limited independence

- Some degree of self-support
- Increased need for guidance when under stress
- Increased supervision
Moderate Intellectual Disability

Severe Intellectual Disability – AXIS II – 318.1

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ) Range</th>
<th>Ability at Preschool Age (Birth to 6 Years)</th>
<th>Ability at School Age (6 to 20 Years)</th>
<th>Ability at Adult Age (21 Years and Older)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ Range = 20-35 or 40</td>
<td>Limited communication</td>
<td>Functional communication</td>
<td>Self-care assistance</td>
</tr>
<tr>
<td>M.A. = 3 – 5.6 yr</td>
<td>Limited Self-help</td>
<td>“Habit trained” adaptive skills</td>
<td>Complete supervision</td>
</tr>
<tr>
<td>0.1% pop</td>
<td>Poor Motor skills</td>
<td></td>
<td>Additional needs</td>
</tr>
<tr>
<td>About 3% to 4% of persons with I.D.</td>
<td></td>
<td></td>
<td>Limited self-protection skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limited understanding of societal rules</td>
</tr>
</tbody>
</table>

Severe Intellectual Disability

- Limited communication
- Limited Self-help
- Poor Motor skills
- Functional communication
- “Habit trained” adaptive skills
- Self-care assistance
- Complete supervision
- Additional needs
- Limited self-protection skills
- Limited understanding of societal rules
**Profound Intellectual Disability**

- **Axis II – 318.2**

<table>
<thead>
<tr>
<th>Intelligence Quotient (IQ) Range</th>
<th>Ability at Preschool Age (Birth to 6 Years)</th>
<th>Ability at School Age (6 to 20 Years)</th>
<th>Ability at Adult Age (21 Years and Older)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ Range = 19 or below</td>
<td>- Extreme cognitive limitation</td>
<td>- Physical limitations</td>
<td>- Routine trained</td>
</tr>
<tr>
<td>M.A. = &lt; 3yr</td>
<td>- Poor motor coordination</td>
<td>- Limited communication</td>
<td>- Extensive medical care</td>
</tr>
<tr>
<td>0.05% pop</td>
<td>- Extended care</td>
<td>- Limited independent behaviour</td>
<td>- Cause – Effect</td>
</tr>
<tr>
<td>1 – 2% of persons with ID.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conditions that affect Adaptive Functioning**

- Personal
- Status
- Health
- Social
- Physical

**Education**

- Reciprocal Effect Education & Socio-economic status
- Parents’ educational level
- Educational experiences can influence future choices
- Choice of field affects personal view
Conditions that affect Adaptive Functioning

Case Study – Dan
- Male – age 30
- Graduated from college – average grades
- Works his way up the field
- Married, has 2 children

Employment
- Employment affects choices
- Varied vs restricted job experiences
- Values & Beliefs affect choices
- A “job” versus a “vocation”
**Socio-Economic Status**

- Availability of external support
- Availability of options & choices
- Changes in status can result in stress

**Mental Health**

- Life Events and Personal Crisis can result in a decline functioning abilities
  - Family crisis
  - Personal Crisis
  - Each event can escalate previous crisis

-Dan – Increased Stress

Each event can escalate previous crisis
Mental Health & I.D.
- Approximately 10 to 40% of people with ID
- Anxiety and depression are common

Case Study - Dan
- Dan completed his management program
- Changed jobs
  - Within 6 months was dissatisfied
  - Supervisor was a “bully”
  - Increased conflicts
  - Increased physical reactions
- Dan’s level of adaptive functioning declines

Self-Image
- Is affected by all conditions
- Can change over life span
- Is subjective & variable depending on conditions
- Can be unrealistic or unconnected to observed / actual functioning ability
High Stress, "Stressed and Depressed" - Dan

Mental Health

Mental Health

If reaction is helpful - Resolution
If reaction is NOT helpful - continued feeling of crisis
If reaction is negative - CRISIS
### Cultural / Ethnic / Religious
- **Values & beliefs**

### Interpersonal
- **Comfort**
- **Trust / Sharing**
- **Acceptance**
- **Understanding**

### Family Dynamics
- **Relationships within family affects interactions outside family.**
- **Affects**
  - Self-image
  - Trust
  - Empathy
  - Expression of feelings.
  - Physical contact, etc.

### Intimate Relationships
- **Changes in intimate relationships = changes in functioning abilities**
  - Increase or decrease
  - Future involvement
  - Support
  - Socio-sexual
High Stress, "Helpless"

Living Accommodations
- Age
- Economic status
- Interpersonal
- Community
- Available supports

Physical Health
Affected by:
- Age, genetics & gender
- Physical abilities - health / sensory abilities & sensitivities / illness / disorders / injuries
- Sleeping & eating patterns
- Level of physical activity
Adaptive Functioning & Supports

- Multiple conditions can affect Adaptive Functioning:
  - Personal, Social, Health, Physical, Community
  - Deficits or no gains?

- With appropriate supports over a sustained period, the adaptive functioning of the person with an intellectual disability will generally improve
  - More independent, productive, and integrated into their community.

- Finally, in rare circumstances, the major objective should be to maintain current level of functioning or to slow regression over time.

Thank You!

References

- Adaptive Behavior Assessment System – II
- Explaining Psychometric Data to IEP Teams, Emily S. Rosen, Linda S. Larrivee
- History of the WISC IV, Richard Niolon, Ph.D., 08/05
- The Role of Intelligence Tests in Qualifying Students as Mentally Retarded: Are Intelligence Tests Biased? Dr. Amelia Jurando, Fredericksburg City Public Schools, Fredericksburg, Virginia
- Howard Gardner – Multiple Intelligences and Education - www.infed.org/thinkers/gardner.htm