No Financial Disclosures

History of DSM

- DSM 1 (1952) – similar to ICD 6; followed the psychobiological view that mental disorders represented reactions of the personality to psychological, social, and biological factors.

- DSM 2 (1968) – removed term “reaction”

- DSM 3 (1980) – introduced explicit diagnostic criteria and the five part axial system.

- DSM 4 (1994) – no big changes

- DSM 5 (2013) – reflects interrelationships, has lifespan and cultural perspectives, removed axial system, integrated neuroscience, and has more emphasis on functional status.
- Mental retardation
- Autism Disorder
- Asperger’s D/O
- Childhood Disintegrative D/O
- Pervasive Developmental D/O

- Intellectual disability
- Autism Spectrum Disorder

- New Depressive Disorder ➔ Disruptive Mood Dysregulation
- Major Depressive Disorder ➔ now removes the 2 month bereavement exclusion
- PTSD ➔ separate criteria added for diagnosis < 7 years
- Anorexia Nervosa ➔ amenorrhea requirement eliminated
- Bulimia Nervosa ➔ minimum frequency of binges reduced
- Binge Eating Disorder ➔ duration and minimum frequency reduced
Disruptive, Impulse-Control, and Conduct Disorders

- Oppositional Defiant D/O ➔ age appropriate symptoms added and can be comorbid with Conduct D/O now
- Conduct Disorder ➔ descriptive specifier added
- Intermittent Explosive Disorder ➔ physical aggression criterion eliminated and minimum age of 6 yrs required

Attention Deficit Hyperactivity Disorder

- Same 18 symptoms in 2 domains (inattention and hyperactivity/impulsivity)
- 6 symptoms needed in one domain for children; 5 for adults
- Symptoms must have been present <12 yo
- Subtypes replaced with specifiers
- Comorbid diagnosis with ASD now allowed
### Mortality Statistics in Psychiatry

- **Finland Study by Joukamaa et al. (2001)**
  - 17 year study (1977-1997)
  - 35% of general population with psychiatric diagnosis

<table>
<thead>
<tr>
<th>Relative Risk of Premature Death</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
</tr>
<tr>
<td>1.56</td>
</tr>
</tbody>
</table>

Cardiovascular, Coronary Heart, and Respiratory Disease, and Suicide.

*Men had excess death from non-suicidal Injuries*

---

### Mortality Statistics in Psychiatry

- **London Study by Chang et al. (2010)**
  - 2007-2009 1.3 million population with a 31,719 sample >14 yo
  - Serious Mental Illness (SMI) – schizophrenia, bipolar, depressive disorders, or substance use disorders

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI</td>
<td>2.47</td>
<td>1.89</td>
<td>2.15</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>2.78</td>
<td>1.74</td>
<td>2.25</td>
</tr>
<tr>
<td>Schizoaffective</td>
<td>2.35</td>
<td>2.88</td>
<td>2.52</td>
</tr>
<tr>
<td>Bipolar</td>
<td>1.76</td>
<td>2.21</td>
<td>1.95</td>
</tr>
<tr>
<td>Substance use</td>
<td>3.60</td>
<td>4.67</td>
<td>4.17</td>
</tr>
<tr>
<td>Depressive</td>
<td>1.53</td>
<td>1.18</td>
<td>1.29</td>
</tr>
</tbody>
</table>
Mortality Statistics in Psychiatry

- London Study by Chang et al. (2010)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>15-44 yo</th>
<th>45-64 yo</th>
<th>65+ yo</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI</td>
<td>4.47</td>
<td>3.10</td>
<td>1.60</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>4.73</td>
<td>3.44</td>
<td>1.63</td>
</tr>
<tr>
<td>Schizoaffective</td>
<td>3.96</td>
<td>2.71</td>
<td>2.10</td>
</tr>
<tr>
<td>Bipolar</td>
<td>4.09</td>
<td>2.58</td>
<td>1.51</td>
</tr>
<tr>
<td>Substance use</td>
<td>6.81</td>
<td>4.40</td>
<td>1.91</td>
</tr>
<tr>
<td>Depressive</td>
<td>3.21</td>
<td>1.75</td>
<td>1.18</td>
</tr>
</tbody>
</table>

Suicide

- In 2010, 10th highest cause of death in USA
- 12.1 deaths/100,000

- Adults → higher rate with mood disorder, panic disorder, and substance abuse
- Children and adolescents → higher rate with previous attempts and mood disorder, especially in combination with conduct disorder
- Males → higher rate with substance and alcohol abuse
- >90% of people who kill themselves have a diagnosable mental illness
Rate of Suicide in 2010

By Age (deaths/100,000)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24 yo</td>
<td>10.5</td>
</tr>
<tr>
<td>25-44 yo</td>
<td>15</td>
</tr>
<tr>
<td>45-64 yo</td>
<td>18.6</td>
</tr>
<tr>
<td>65-84 yo</td>
<td>14.5</td>
</tr>
<tr>
<td>85+ yo</td>
<td>17.6</td>
</tr>
</tbody>
</table>

By Sex (deaths/100,000)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>19.9</td>
</tr>
<tr>
<td>Women</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Attempt : death ratio

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth</td>
<td>25:1</td>
</tr>
<tr>
<td>Elderly</td>
<td>4:1</td>
</tr>
</tbody>
</table>

Eating Disorders

Anorexia Nervosa

- (Refusal to maintain body weight at or above a minimally normal weight for age and height): Weight loss leading to maintenance of body weight <85% of that expected or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected.
- Intense fear of gaining weight or becoming fat, even though under weight.
- Disturbance in the way one's body weight or shape are experienced, undue influence of body weight or shape on self evaluation, or denial of the seriousness of the current low body weight.
Eating Disorders

Bulimia Nervosa
- Recurrent episodes of binge eating characterized by both:
  - Eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat.
  - A sense of lack of control over eating during the episode.
- Recurrent inappropriate compensatory behavior to prevent weight gain.
  - ie. vomiting, laxatives, fasting, excessive exercise
- The binge eating and inappropriate compensatory behavior both occur, on average, at least once a week for 3 months.
- Self evaluation is unduly influenced by body shape and weight.

Binge Eating Disorder
- Recurrent episodes of binge eating characterized by both:
  - Eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat.
  - A sense of lack of control over eating during the episode.
- The binge eating occurs, on average, at least once a week for 3 months.
- Accompanied by feelings of guilt, embarrassment or disgust.
Eating Disorders

- Meta-analysis of 36 studies from 1966-2010 by Arcelus et al. (2011)

<table>
<thead>
<tr>
<th>Mortality Rates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anorexia Nervosa</td>
<td>5.86</td>
</tr>
<tr>
<td>Bulimia</td>
<td>1.93</td>
</tr>
<tr>
<td>Eating Disorders NOS</td>
<td>1.92</td>
</tr>
</tbody>
</table>

1 in 5 Anorexia Nervosa deaths were from suicide

<table>
<thead>
<tr>
<th>Age and Mortality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Diagnosis</td>
<td>Mortality Rate</td>
</tr>
<tr>
<td>&lt;15 yo</td>
<td>3</td>
</tr>
<tr>
<td>15-19 yo</td>
<td>10</td>
</tr>
<tr>
<td>20-29 yo</td>
<td>18</td>
</tr>
<tr>
<td>30+ yo</td>
<td>6</td>
</tr>
</tbody>
</table>
Autism Spectrum Disorder

• Persistent deficits in social communication and social interaction across multiple contexts
  ie. deficits in social-emotional reciprocity, nonverbal communication, maintaining or understanding relationships, …
• Restricted, repetitive patterns of behavior, interests, or activities (at least 2) currently or historically
  ie. Repetitive movements or speech, inflexibility, highly fixated interests, hyper- or hyporeactivity to sensory input, …
• Symptoms must be present in the early developmental period
• Symptoms cause clinically significant impairment
• These disturbances are not better explained by intellectual disability or global developmental delay.

• Behaviors can improve or deteriorate over time
• 20-33% epilepsy
• 40% comorbid psychiatric disorder
• Increased mortality rate
• Adaptive behavior is usually markedly lower than intelligence
• Independent living often compromised
• Mortality is greatest from epilepsy, accidents, and “cause unknown”
Autism Spectrum Disorder

- Male:Female = 3.9:1

<table>
<thead>
<tr>
<th>Autism Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>1.7</td>
</tr>
</tbody>
</table>

- Death rate of autism + epilepsy is 6x’s that of autism alone

ADHD

- Inattention
- Hyperactivity/impulsivity
- Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.
- Several symptoms are present in two or more settings
- There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.

- Three presentations of ADHD
  - Combined
  - Predominantly inattentive
  - Predominantly hyperactive/impulsive
ADHD

• Inattention:
  – Often fails to give close attention to details or makes careless mistakes
  – Often has trouble holding attention on tasks or play activities.
  – Often does not seem to listen when spoken to directly.
  – Often does not follow through on instructions and fails to finish tasks.
  – Often has trouble organizing tasks and activities.
  – Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time.
  – Often loses things necessary for tasks and activities
  – Is often easily distracted
  – Is often forgetful in daily activities.

• Hyperactivity and Impulsivity:
  – Often fidgets with or taps hands or feet, or squirms in seat.
  – Often leaves seat in situations when remaining seated is expected.
  – Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
  – Often unable to play or take part in leisure activities quietly.
  – Is often “on the go” acting as if “driven by a motor”.
  – Often talks excessively.
  – Often blurts out an answer before a question has been completed.
  – Often has trouble waiting his/her turn.
  – Often interrupts or intrudes on others (e.g., butts into conversations or games)
Mortality and ADHD in Adults with Childhood ADHD by Barbaresi et al. (2013)

Rochester, Minnesota, born 1976-1982

Retrospective and prospective components

- 5718 records reviewed
- 367 with childhood ADHD
  - 1.9% deceased
  - 2.7% incarcerated

- All cause death = 1.88 
  Not significant

- Accidental death = 1.7

- Suicide = 4.83 
  Significant
ADHD

Prospective

- 232 with childhood ADHD
- 335 Controls
- 29.3% met criteria for adult ADHD
- 34.9% with ψ Dx

**Adult ADHD and Psychiatric Diagnoses**

<table>
<thead>
<tr>
<th></th>
<th>ψ Dx</th>
<th>Ø ψ Dx</th>
</tr>
</thead>
<tbody>
<tr>
<td>aADHD</td>
<td>23.7%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Ø aADHD</td>
<td>33.2%</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

232 patients with childhood ADHD

- 87 had no aADHD, no psychiatric disorders 37.5%
- 77 had only psychiatric disorders 33.2%
- 13 had aADHD 5.6%
- 55 had aADHD and psychiatric disorders 23.7%
References 1

- Barbaresi, W., Colligan, R., Weaver, A., (2013). Mortality, ADHD, and Psychosocial Adversity in Adults With Childhood ADHD: A Prospective Study. *Pediatrics 131*(4) 1-10
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- Highlights of Changes from DSM-IV-TR to DSM-5, (2013) *American Psychiatric Association*