

Eating Disorders and Alcoholism (Slide 1)

Laurie McCormick, M.D.

University of Iowa Carver College of Medicine, Department of Psychiatry
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I. Introduction

A. Eating disorders are common, but hard to identify (Slide 2)

1. Prevalence of all eating disorders are ↑; ~5% of US population ^{1,2}
 - a. 3% US ♀ & ~ 1% ♂ have an eating disorder (anorexia or bulimia nervosa)
 - b. Binge eating occurs equally in ♂ & ♀ ~ 5% ³
2. 80% of US ♀ are dissatisfied w/ body – 50% of these are of normal weight ⁴
3. 45% ♀ & 25% ♂ & are on a diet on any given day in US
4. 35% of “normal dieters” in US → pathological dieting; ~ 25% of those → to EDs ⁵ (Slide 3)
5. In the EAT-II longitudinal study of ~ 5,000 Junior/Senior HS students ⁶
 - a. ~ 65% of teenage ♀; 35% of teenage ♂ used unhealthy weight control measures (e.g. skip meals/food substitutes/fast/smoke)
 - b. ~20% of teenage ♀; 10% of teenage ♂ used very unhealthy weight control measures (e.g. vomit/diet pills/laxatives/diuretics)
6. Shame/secretiveness prevents identification ^{7,8}

B. Alcohol use disorders (AUDs) are also common (Slide 4)

1. U.S. adults:
 - a. ~90% lifetime alcohol use ⁹
 - b. ~50% used alcohol in past year
 - c. 60% of HS seniors have already been drunk
2. “Hazardous drinkers” → (>5 drinks/day) ~ 25% past year ^{10,11}
 - a. Not abuse or dependence
 - b. ♂ ≥ 5 drinks/day or ≥ 15 drinks/wk
 - c. ♀ ≥ 4 drinks/day & ≥ 8 drinks/wk
 - d. Risk for alcohol-related problems (↑blood pressure, cancer risk)

3. Alcohol abuse prevalence ¹²

- a. 18% lifetime: ♂ > ♀ (~2:1)
- b. 5% 12-month prevalence
- c. <10% will progress to dependence

4. Alcohol dependence prevalence ¹²

- a. 13% lifetime: ♂ > ♀ (~2:1)
- b. 4% 12-month prevalence
- c. 50% will develop clinically relevant symptoms of withdrawal (e.g. hand tremor/hallucinations/nausea/vomiting/seizures/insomnia)
- d. Only ¼ seek treatment

C. Mortality & Morbidity of EDs & AUDs (Slide 5)

1. EDs - ↑ mortality rate of any psychiatric ds

- a. 18X ↑ in mortality rate, ↓ lifespan by a decade ¹³
- b. 12% will die (> ½ from suicide) ¹⁴

2. ED – all bodily systems begin to shut down (osteoporosis, amenorrhea, muscle wasting)

3. AUDs - ↑ 3-4X early death ¹⁵

- a. Health related (e.g. stroke, cancer, heart ds), ↑risk for ♀ w/ mild-moderate

drinking

- b. Accidents

- c. Suicide

*This lecture reviews (Slide 6)

1. Definitions of EDs & AUDs
2. Relationships between EDs & AUDs
3. Screening & identification of EDs & AUDs
4. Assessment & management of EDs & AUDs

II. Definitions of EDs & AUDs

A. What are EDs? – Youtube video from “eating disorder awareness week” (Slide 7)

1. DSM-IV definition of AN (WAFE mnemonic) (*Slide 8*)
 - a. Weight – Refusal to maintain weight at 85% of expected
 - b. Amenorrhea (only in ♀ of child-bearing age)
 - c. Fear of gaining weight
 - d. Self-Evaluation is influenced by weight/shape
 - e. Sub-types:
 - i. Restricting – (e.g. ↓ intake, skipping meals)
 - ii. Binge-eating/purging – (e.g. ↑ food intake w/ compensatory restricting, vomiting, &/or laxative use)
 - iii. 50% of AN cross-over from restricting to binge-purge type (over 7 years)

2. DSM-IV definition of BN (BICEN mnemonic) (*slide 9*)
 - a. Binge eating episodes – recurrent
 - b. Inappropriate compensatory behavior – recurrent
 - c. Compensatory behavior 2X/week for 3 months
 - d. Self-Evaluation due to body weight/shape
 - e. Not occurring exclusively during AN
 - f. Sub-types:
 - i. Purging (e.g. vomiting, laxatives, diuretics)
 - ii. Non-purging (restricting food intake, over exercising)
 - g. Cross-over rates ^{16,17}
 - i. 50% of BN – overweight from overeating – rarely crosses over to AN
 - ii. 30% of AN – cross over to BN

3. Eating disorder – Not Otherwise Specified (ED-NOS) (*slide 10*)
 - a. AN or BN with partial criteria
 - i. AN w/o amenorrhea or at normal body weight
 - ii. BN with compensatory behavior (e.g. running, purging) < 2X week
 - iii. Purging disorder without binges ¹⁸ or chewing food & then spitting out
 - b. Partial criteria AN and BN have ♀:♂ ratio of 2:1 ¹⁹

c. Binge eating disorder (BED)²⁰

- i. Recurrent episodes of binge eating (i.e. eating a lot in < 2 hrs)
- ii. A sense of lacking control over eating
- iii. Binges are associated with 3 or > of the following
 - Eating much more rapidly than normal
 - Eating until feeling uncomfortably full
 - Eating a large amount of food when not feeling physically hungry
 - Eating alone/embarrassed by how much one is eating
 - Feeling disgusted with self, depressed or very guilty after

overeating

- iv. Marked distress regarding binges
- v. Binge eating occurs $\geq 2X/week$ x 6 mo's
- vi. Binges – not w/ compensatory behaviors (fasting/purging/exercise)

vii. Does not occur during the course of AN or BN

4. Alcohol abuse/definitions (*slide 11*)

a. DSM-IV alcohol abuse

- i. Repeated problems in same 12 months w/ ≥ 1 of:
- ii. Inability to fulfill role obligations
- iii. Use in physically hazardous situations
- iv. Legal problems
- v. Social or interpersonal problems
- vi. Never met criteria for dependence

b. DSM-IV alcohol dependence

- i. Repeated problems over same 12 months w/ ≥ 3 of:

- ii. Tolerance: ↑ use for same effect; ↓ effect with same amount used
- iii. Withdrawal syndrome or ↑ alc use to ↓ anxiety/ insomnia/tremors
- iv. Use larger/longer than intended
- v. Desire or unsuccessful efforts to cut down
- vi. ↑ time spent in alcohol-related activities
- vii. Give up important activities
- viii. Continued use despite persistent problems

*This lecture reviews (*Slide 12*)

- 1. Definitions of EDs & AUDs
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- 3. Screening & identification of EDs & AUDs
- 4. Assessment & management of EDs & AUDs

III. Relationships of ED & AUD

A. EDs & AUDs can co-occur (*slide 13*)

- 1. A meta-analysis – 41 studies of ♀ (1985-2006) = ↑ risk of AUD w/ BN, but not AUD & AN ²¹
 - a. Only 4 studies showed a negative association
 - b. Disordered eating behaviors may be more strongly associated w/ alcohol related problems rather than use ²²
 - c. Cross over from BN to AUD or vice-versa may ↑ occur over time ²³
 - i. 1/2 – ED occurs before AUD
 - ii. 1/3 – AUD occurs before ED
 - iii. 10% had onset of both AUD & ED – same year
- 2. Comorbidity increases severity?
 - a. No, but AUD severity, not BN severity – predict poorer outcome ²³
 - b. AUD severity in AN → ↑↑ risk of death ¹⁴
 - c. Screen for AUDs in AN!

B. ED + AUD Comorbidity (*slide14*)

1. Anxiety disorders = ↑ risk factor for developing an ED &/or AUD
 - a. 2/3 of EDs have anxiety ds – before onset of ED ²⁴
 - b. Anxiety also almost always precedes onset of AUD – not after ²⁵
2. Some similar psychological characteristics in women with BN & AUD
 - a. ↑ novelty seeking (thrill seeking/pleasure new experiences) – predispose to BN & AUD ^{26,27}
 - b. ↑ novelty seeking & ↑ affect from rewards in BN + AUD, compared to BN w/o AUD ²⁶
 - b. Novelty seeking mediates risk of AUD in alcohol dependent families ²⁷
3. Binge eating in ED & heavy drinking in AUD - similar psychological functions ^{28,29}
 - a. Women with AUD & ED – binge for emotional relief or reward ²⁸
 - i. Heavy drinking – related to needing ↑ reward +/- ↓ intense emotions ²⁹
 - ii. Binge eating – ↓ intense emotions +/- ↓ urge/temptations to drink

C. Sociocultural explanations for EDs (*slide 15*)

1. Example: dual-pathway model of overeating in BN ^{30,31}
 - a. Pressure to be thin & thin-ideal internalization can lead to body dissatisfaction
 - b. Body dissatisfaction leads to dieting & negative affect, which leads to bulimic sxs & over-exercising
 - c. Neuroticism predispositions further drive body dissatisfaction & visa-versa as well as negative affect, which then drives depression and low self-esteem

D. Common mechanisms: food & alcohol = reward & motivation (*slide 16*)

1. Similar dopamine/opiates dysregulation of reward motivation/pleasure in ED & AUD? ^{32,33}
2. Dopamine release in brain's mesolimbic system – regulates reward from food/drugs/alcohol ³⁴
 - a. Wobbly D2 dopamine receptor (DRD2) – A1 allele - ↓DA binding w/ alc in AUDs ^{35,36}
 - b. Example: Wobbly DRD2 A1 allele - ↓DA binding w/ food in BED/BN/obesity ^{37,38}
3. Opioid dysregulation affects food & alcohol intake in ED & AUD ^{39,22}
 - a. Low/moderate alcohol – ↑ beta-endorphin in mesolimbic system ³⁹
 - b. Strong opiate receptor mu (G allele of A118G) – ↑ opiate binding w/ food in BED ⁴⁰

c. Opioid receptor kappa 1 (OPRK1) long allele – ↑ opiate binding w/ alcohol in AUD ⁴¹

d. Opiate antagonists may help interrupt reinforcing effects of food ⁴² & alcohol ⁴³

E. Genetic & environmental risk factors (*slide 17*)

1. Genetics explain 50% of AUD & 70% of ED risks ^{43,44}

a. Primarily based on twin studies, adoption and family studies

b. Multiple genes contribute to ↑ & ↓ risks (e.g. asthma & DM polygenetic + environmental risks)

2. Sociocultural factors contributing to EDs ⁴⁵ (*Slide 19*)

a. “Thin ideal” + “pressures to be thin” → body dissatisfaction → dietary restraint + negative affect → exercise and/or binge/purge cycles

b. Neuroticism & low self-esteem may be major mediators

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IV. How to screen & identify patients

A. Inquire about disordered eating, self-evaluation based on weight

1. Patient Health Questionnaire (PHQ) – modified PRIME-MD ⁴⁶ (*slide 19*)

a. Patient administered with 15 sections for various psychiatric disorders

i. Sections 6,7, 8 – have 9 questions (yes/no) to abnormal eating patterns

ii. “Do you often feel you can’t control what/how much you eat?”

iii. “Do you ever vomit?”

iv. Sections 9,10 – have 7 questions (yes/no) to detect alcohol related problems

v. “Do you drink alcohol? Did your doctor suggest you should stop?”

b. Overall accuracy – 85%; sensitivity to detect – 75%; specificity for the illness – 90%

2. Eating Disorder Examination Questionnaire (EDE-Q) - abnormal eat & wt concerns (*slide 20*)

a. Patient administered – 28 items (6-point scale)

- i. "Have you tried to limit the food you eat to influence your shape/weight?"
- ii. "In the past month, have many times did you feel lost control over eating?"

b. Sensitivity – 80%, specificity – 80% ⁴⁷

B. Inquire about hazardous drinking & alcohol-related problems

1. Alcohol Use Disorders Identification Test (AUDIT) (*slide 21*)

- a. 10-item questionnaire (5-point scale) reviewing drinking patterns & problems ⁴⁸
- b. Score of ≥ 8 = positive test for hazardous drinking / \uparrow risk of alcohol dx
- c. Sensitivity to detect: 50-90%; specificity for disease: 80%

2. AUDIT-C (3-question version of the full 10-item AUDIT)

- a. First 3 questions of the AUDIT – provides a faster screening for AUD ⁴⁹
 - i. How often do you have a drink of alcohol?
 - ii. How many drinks of alcohol drinks on one occasion?
 - iii. Do you ever have 6 or more on a given day?
- b. Positive score for identifying hazardous drinking \rightarrow $\text{♂} \geq 4$; Women ≥ 3
- c. Nearly as sensitive/specific as full AUDIT

C. ED complaints & findings (*slide 22*)

1. Abnormalities found in ED

a. Complaints:

- i. Constipation (irritable bowel syndrome),
- ii. Gastroesophageal reflux disease,
- iii. Dental cavities,
- iv. Menstrual irregularity

b. Physical findings:

- i. Emaciated appearance – if anorexic
- ii. Dental erosions – if bulimic,
- iii. Enlarged salivary/parotid glands – if bulimic

c. Laboratory findings: (*Slide 23*)

- i. \uparrow amylase (>123 u/L),

- ii. ↑ alanine & aspartate aminotransferase (ALT = >67u/L / AST = >65u/L),
- iii. ↓ potassium (hypokalemia = <3.5mEq/L),
- iv. ↓ white blood count (<4.3 x 10³mm³),
- v. ↓ bone density (osteopenia = < 1.5-2.0 SD /osteoporosis = < 2.0SD)

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V. Management of patients with eating disorders & alcoholism (*slide 25*)

A. Comorbidity of these disorders occur – so which disorder to treat first & what setting?

1. Inpatient hospitalization for ED - severe malnutrition; cannot normalize food intake
 - a. Specialized units - nutritional rehabilitation/regular meals/abstinence from binge/purge
 - b. Psychotropic interventions & treat psychiatric & medical comorbidities
 - c. Psychotherapeutic approaches
 - d. More details later about approaches for each disorder
2. Inpatient hospitalization for AUD 1st – if risk for serious withdrawal symptoms
 - a. Nutritional rehabilitation/alcohol withdrawal with benzodiazepines
 - b. Referrals made for outpatient treatment
3. Partial hospitalization programs
 - a. Both AUD & ED treatment – separate programs, lasting 2-4 wks on average
 - b. Day programs for ED treatment for AN & BN
 - i. 40% remission at 1-yr follow-up (f/u) ⁵⁰
 - ii. ↑ BN symptoms after inpatient vs. day treatment, same result @ 3mo f/u ⁵¹
 - c. Day programs for AUD – may ↑ abstinence & more cost-effective ⁵²
 - i. Day treatment vs. outpatient 62% vs. 39% for self-selected group
 - ii. Mid-level severity/self-selected had ↑ abstinence & was more cost-effective
 - iii. 20-30% of highly motivated people with AUD can attain remission w/o tx ^{53,54}

4. Long-term outpatient programs

- a. Long-term psychotherapy for ED may be indicated - multiple relapses are common ⁵⁵
- b. Long-term alcoholic anonymous (AA) group therapy - ↑ outcome ⁵⁶
- c. Outcome is good for both disorders
 - i. 50% complete, 70% partial remission for EDs - 1 yr after tx ⁵⁷
 - ii. 50-60% abstain or improve functioning for AUD - 1 yr after tx ⁵⁸
 - iii. No simple way to match different treatments for specific patients

B. Initial interventions (*slide 26*)

- 1. Directive brief interventions may ↑ compliance & improve outcome ⁵⁹⁻⁶¹
 - a. Explain risks for developing an AUD or ED
 - b. Educate about dangers of continued heavy drinking and/or unhealthy eating or weight control methods
 - c. Provide examples of benefits of change
- 2. Brief motivational interviewing may ↑ compliance & is also cost-effective ⁶²⁻⁶⁵
 - a. Feed back on risks
 - b. Responsibility for change
 - c. Advice
 - d. Menu of treatment options
 - e. Empathetic interaction
 - f. Self-efficacy enhancement

C. Psychotropic medication interventions for ED & AUD

- 1. Limited efficacy of psychotropic medications for ED ⁶⁶ (*slide 27*)
 - a. 3 randomized controlled trials (RCTs) of fluoxetine (Prozac) at 60mg qD ⁶⁷
 - i. Blocks serotonin reuptake
 - ii. 50% ↓ binge frequency in BN in the short-term (8-16 wks)
 - iii. No long-term difference in remission rates (1 yr or longer)
 - iv. Side-effects include emotional blunting, possible agitation, insomnia
 - b. 2 RCTs of fluoxetine 60mg qD w/ or w/o cognitive behavioral therapy (CBT) ^{68,69}
 - i. Remission @16wks = 12% w/ CBT vs 20% CBT + med or placebo ⁶⁸

- ii. Remission @16wks = 25% w/ CBT + med vs 15% w/ med only ⁶⁹
 - c. Fluoxetine no better than placebo for BED ⁷⁰
 - d. RCT of Topiramate (Topamax) 25-400mg qD:
 - i. ↓ binge episodes from 5 to 3 /day – for both BN & BED ⁷¹
 - ii. Weight loss of ~ 5 pounds over 10 weeks, compared to 0 for placebo
2. Limited efficacy of psychotropic medications for AUD (*slide 28*)
- a. FDA treatments: disulfiram (Antabuse), naltrexone (Revia), acamprosate (Campral) ⁷²
 - i. Most evidence of efficacy for naltrexone 50-100mg qD:
 - Blocks opiate receptors
 - 25% ↓ rate of heavy drinking ⁷³
 - Response may be better for those with a family history of AUD ⁷⁴
 - Safest side-effect profile (drowsiness/drug interactions/liver fxn)
 - ii. Acamprosate – ↑ time to relapse (36% abstinent vs 23% placebo @ 6mo) ⁷⁵
 - Blocks glutamate/GABA
 - Can cause GI upset & diarrhea
 - iii. Combined naltrexone 50mg qD & acamprosate 666mg TID - synergistic ⁷⁶
 - iv. Disulfiram 250mg qd – ↑ abstinence & ↓ relapse in 12 wk trial ⁷⁷
 - Causes an aversive response if alcohol is consumed during its use
 - Limited evidence of efficacy
 - Potentially dangerous side effects: liver disease, depression, psychosis
 - b. Non-FDA treatment: Topiramate (Topamax) 300mg/d → > 50% ↓ heavy drinking dys ⁷⁸
 - i. Blocks glutamate transmission
 - ii. ↑ abstinence from 35 to 60 days
 - iii. ↓ daily drinks from 6 to 4
 - iv. ↑ measures of liver problems (↓GGT by >50%)
 - c. Naltrexone, acamprosate & topiramate – ↓ alcohol intake if abstinence isn't possible
3. Possible overlapping efficacy for EDs & AUDs (*slide 29*)
- a. No good evidence for naltrexone for EDs
 - b. An open label trial of acamprosate for BED & alcohol dependence – 4wks ⁷⁹

i. ↓ cravings for food in AUD

ii. No weight gain

c. RCTs of Topiramate for BED & AUDs ⁸⁰

i. ↓ heavy drinking days by 50% in AUD

ii. ↓ weight in BED by 7lbs in 21 wks

iii ↓ binge episodes a week from 3.5 to 2.5 & ↓ weight by 5kg in 16 wks ⁸¹

D. Psychotherapeutic interventions for EDs & AUDs (*slide 30*)

1. Efficacy of psychotherapeutic approaches in ED

a. Most evidence for family therapy in adolescents ⁸²

i. Corrects dysfunctional/enmeshed boundaries between parents & children

ii. Therapist supports adolescent individuation & ↓ guilt/criticism from parents

b. Efficacy of cognitive behavioral therapy (CBT) for BN & BED ⁸³

i. CBT = systematic approach to ↓dysfunctional thoughts/behavior

ii. Guided self-help or group options

iii. 60% abstinent & ↓ purging by 80% vs treatment as usual - 16 wks ⁸⁴

2. Efficacy of psychotherapeutic approaches in AUD

a. A variety of psychosocial & psychotherapeutic approaches may ↑ outcome ⁸⁵

b. Alcoholics anonymous (AA) support groups may ↑ time to relapse ⁸⁶

i. “12 step” approach examples:

- One cannot control addiction

- Recognize a greater power can give strength

- Turn life over to that power

- Make a list of those harmed & make amends with them

ii. AA should be used in conjunction with psychotherapeutic approaches

VI. Summary (*slide 31*)

A. Definitions of ED & AUD are important to know, can occur together & are common

B. Significant relationships between ED & AUD - points to overlapping etiology & possible tx

C. Screening & identification are important – under recognized & under treated

D. Assessment & management of each disorder improves outcomes

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