Switching Deckchairs on the Titanic: Eating Disorders as a Growing Phenomenon of Cross-Addiction

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Prepared For
NAADAC - A Virtual Workshop
December 7th, 2022
Marty Lerner, PhD.
Milestones In Recovery
Switching Deckchairs on the Titanic: Eating Disorders as a Growing Phenomenon of Cross-Addiction

Defining The Problem

EATING DISORDERS: PSYCHIATRIC, SUD, OR PROCESS ADDICTION?
Emotional Or Biological Determinants?

Much more often than not, disordered eating is approached as a psychological problem involving poor impulse control and “emotional eating.”

Not recognizing, and treating, the biological drivers of food cravings and overeating [or restrictive dieting] often leads to a poor outcome in treatment. Likewise for restricting types of eating disorders.

“Treatment of an eating disorder demands attention to the nature of the substance [properties of the foods consumed], the nature of the person or behaviors [psychological contributors] and the biology of the individual.”

M LERNER 2016

Substance Use Disorders
American Psychiatric Association DSM V

- Tolerance
- Withdrawal symptoms
- More for longer periods than intended
- Unsuccessful effort to cut back or control
- Significant time to obtain or recover from effects
- Giving up social, occupational, recreational, activities because of substance use
- Continuation despite consequences

* LEVEL OF DEPENDENCY: MILD 2-3  MODERATE 4-5  SEVERE 6+
CROSS ADDICTION: DEFINITION

What Does Cross Addiction Mean?

Cross addiction, also known as addiction transfer or Addiction Interaction Disorder, is when a person has two or more addictive behaviors. The addictions can include alcohol or other drugs, but can also include addictions to food and eating disorders, gambling, sex, gaming, nicotine consumption, or other compulsive behaviors.

Dopamine – The Reward / Feel Good Neurotransmitter

- The greater the expectation and experience of the substance, the “stronger” the dopamine signal. [Learned / Conditioned]
- Drugs such as cocaine, amphetamines, alcohol, opiates, stimulate increased levels of dopamine. [include sugar and palatable foods]
- Dopamine deficiencies will develop in response to repeated use / abuse of substances. The down regulation of D2 receptors creates tolerance.
- Dopamine deficiencies are thought to motivate drug seeking behavior / craving, in an attempt, to avoid withdrawal or experience the prior pleasant feelings. “Chasing the original high” – initial [feels good] middle stage [less good] end [avoid pain of withdrawal]
"A Picture Worth a thousand Words...."

Food Addiction Institute’s Quote...

“Food addiction is a disease, causing loss of control over the ability to stop eating certain foods. Scientifically, food addiction is a cluster of chemical dependencies on specific foods or food in general; after the ingestion of highly palatable foods such as sugar, excess fat and/or salt the brains of some people develop a physical craving for these foods. Over time, the progressive eating of these foods distorts a person’s thinking and leads to negative consequences they do not want but cannot stop.”

Phil Werdel, M.S., A.C.O.R.N. - FAI
Summary-Distillation of the Research Literature

The evidence suggests SUDs may be co-morbid with eating disorders especially BED and BN within a significant number of individuals\(^3\). Specifically, positive associations have been reported among binge-eating scores, difficulties in emotional eating regulation, restraint, dis-inhibition and hunger, night-eating scores, craving, impulsivity, reward sensitivity, depressive symptoms, anxiety, post-traumatic stress disorder and histories of SUDs\(^3\).

- Studies [references available upon request] include correlations between cross addictions and may include eating disorders / food addiction and alcohol dependency, drug abuse, nicotine addiction, process addiction [gambling, shopping, sex, etc] and just about anything stimulating the reward pathways and neurotransmitters associated with pleasure or pain avoidance.

- *Eating Disorders may be used as a “proxy” for food addiction* Food addiction, eating addiction and eating disorders

Can Compulsive Overeating, Binge Eating Disorder, And Bulimia = Food Addiction?

“ARGUMENT AGAINST EATING DISORDERS= ADDICTION”

Drug addiction, alcohol dependency, and process addictions [e.g. compulsive gambling] are substances and behaviors that are not necessary for life AND... food is necessary for life.

“REBUTTAL”

So is water and air – however, people do not consume water & air beyond their biological needs or in ways that threaten their survival. So perhaps the problem is semantics

Drug addiction... not all drugs are addictive
Food addiction... not all foods are addictive
**Anorexia: Restricting Type Addictive Element[s]**

- “If anorexic individuals experience endogenous DA release as anxiogenic rather than hedonic, this may explain their pursuit of starvation, because food refusal may be an effective means of diminishing the anxious feelings associated with the disorder.” [negative reinforcement]

- Avoidant Behaviors = Reward Aspect

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**Anorexia: Addictive Elements**

- “Many people with AN exercise compulsively and find little in life rewarding aside from the pursuit of weight loss. Like other traits, these too persist, in a more modest form, after recovery. These particular traits all involve the neurotransmitter dopamine, which contributes to altered reward and affect, decision-making, and executive control. There is considerable evidence that altered function of dopamine occurs in AN possibly contributing to over-exercise and decreased food intake.”

  - Eating Disorders Center for Treatment and Research, University of California School of Medicine
  - Cocaine Study - restricting anorexics vs normal controls / pleasant vs adversive experience
“Frequently overeating highly palatable foods saturates the brain with so much dopamine that it eventually adapts by desensitizing itself, reducing the number of cellular receptors that recognize and respond to the neurochemical.”

“Consequently, the brains of overeaters demand a lot more sugar and fat to reach the same threshold of pleasure as they once experienced with smaller amounts of the foods. These people may, in fact, continue to overeat as a way of recapturing or even maintaining a sense of well-being.”

So...What Have We Learned and Who Have We Studied?
EXAMPLE WITH WEIGHT LOSS SURGERY AND SUD

The development of a cross addiction can occur with any of the weight-loss surgery procedures including laparoscopic adjustable gastric banding, gastric sleeve and gastric bypass surgeries. To avoid this problem, it is important that individuals considering surgery explore the possibility that they may be at risk for cross-addiction.

fMRI After Drinking a Milkshake
High Sugar / High Fat Ingestion

*Scan on left – Subject given Milkshake after more than a year of abstinence from sugar + high palatable foods. Concept of “sensitivity” and plasticity...
Control Versus Binge Eater
“Sight Of Food Cue”[expectation] and Dopamine

Dynamics “Addictive” Behaviors
Propensity toward cross addiction with SUDs and EDs

- Genetics? – predisposition / family histories
- Reward Circuits? – Dopamine/ Opioid Receptors
- Role of Serotonin and effect on mood, Dopamine & reward
- Classical Conditioning/Associative Learning?
- External [salient] cues “trumping” internal cues
- Hormonal –
- Emotional Stimuli / triggers
- Processed substances / potency
- Plasticity and cross addiction?
- Switching choice of eating disorder, substance of choice, compulsive behavior, etc
- Stress > Cortisol > Increased [or decreased] STRESS RESPONSE
- Trauma > dissociative / learned response and numbing
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The More Processed the more Addictive
“The Making of an Epidemic”

- Coca Leaf > Cocaine > Crack Cocaine
- Poppy Plant > Opium > Morphine > Heroin
- Grapes / Grains > Alcohol 6-12% > 40-50%
- Tobacco Plant > Pipes > Cigarettes
- Sugar Cane > Sugar > HFC [1970]
- Sugar, Salt, Fat > processed “bliss foods” combining these [chips, snack foods, etc]

SUDs aka “The Titanic”

Evidence

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Opposite of tolerance – repeated abuse of a substance will create a significant “sensitivity” or dopamine release with related substances [cross addiction].

Binge eaters, in particular with sugar, will be more “sensitive to the effects of alcohol and cocaine than non-binge eaters.

Although tolerance is reversible it appears sensitization remains for extended periods and even a small amount of the offending substance [or behavior] will result in a heightened response. [See next slide]

Supports “gateway” substances.
AMERICAN SOCIETY OF ADDICTION MEDICINE
...a working definition

- Addiction [AKA SUD] is a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual’s life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences.
- Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases.
- Adopted by the ASAM Board of Directors September 15, 2019

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- “NATURE OF THE PERSON, NATURE OF THE SUBSTANCE or BEHAVIORS, NATURE OF THE ENVIRONMENT”*
  *reference “A Guide to Eating Disorder Recovery” revised 2019, ML

Neuroplasticity, Chronicity, and Relapse

There appears to be plasticity associated with the addiction phenomenon in general as well as changes produced by addiction to specific addicting drugs and behaviors. These findings also provide the basis for the current understanding of addiction as a chronic, relapsing disease of the brain with changes that persist long after the last use of the drug.

Hence, the neuroplasticity in brain circuits and cell function induced by addictive substances [and behaviors] that are thought to underlie the compulsions to resume addictive behavior warrant further exploration. These investigations have significant implications for future therapies and treatments.
Dopamine – The Reward / Feel Good Neurotransmitter

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- Dopamine deficiencies will develop in response to repeated use / abuse of substances. The down regulation of D2 receptors creates tolerance.

- Dopamine deficiencies are thought to motivate drug seeking behavior / craving, in an attempt, to avoid withdrawal or experience the prior pleasant feelings. “Chasing the original high” – initial [feels good] middle stage [less good] end [avoid pain of withdrawal]

Substance and/or Behavior > Use > Abuse

"The brain's pleasure center, called the nucleus accumbens, is essential for our survival as a species... Turn off pleasure, and you turn off the will to live... But long-term stimulation of the pleasure center drives the process of addiction... When you consume any substance of abuse or engage in any “exceedingly pleasurable behavior” the nucleus accumbens receives a dopamine signal, from which you experience pleasure. And so you consume more."
A Couple of “Volunteers”

DUDE...
I HOPE THIS EXPERIMENT
NEVER ENDS

STUDY SHOWS THAT OREOS MAY BE MORE ADDICTIVE THAN COCAINE
Sensitization, Cross-Addiction, and Relapse - Neuroplasticity

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- Binge eaters, in particular with sugar, will be more “sensitive to the effects of alcohol and cocaine than non-binge eaters

- Although tolerance is reversible, it appears sensitization remains for extended periods and even a small amount of the offending substance [or behavior] will result in a heightened response. [See next slide]

- Supports “gateway” substances

Switching Deckchairs on the Food Addiction and Eating Disorders ship...

- Food Addiction > Restricting > ED, Unspecified [anorexia but without meeting underweight criterion]
- Food Addiction > Bulimia [Food Addiction with Purging or other compensatory behaviors]
- Food Addiction > Binge Eating Disorder [alternating between restricting/dieting and then Binge Eating]
- Food Addiction > Anorexic Drug Addiction [amphetamines, cocaine, opiates]
- Food Addiction > “Drunk-orexia” Drinking alcohol on empty stomach > binge eating
For more information or Listing of References:

- Email: mlerner@MilestonesProgram.Org
- Web: www.MilestonesProgram.Org
- Contact Milestones: 800-347-2364 / 954-272-0806

*Milestones offers Residential and Outpatient Treatment for Food Addiction and Associated Eating Disorders. Fully Accredited and Licensed – Located in South Florida, USA

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Part Six: Come On Get Happy: Women, Recovery, and Happiness - Earn 1.5 CEs for $25

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