How valid is food addiction, and can it be measured?

British Nutrition Foundation
October 7th 2013

Graham Finlayson, PhD
Assoc. Prof. in Biopsychology
Food addiction debate: Is FA real?

Public
Press & Media

Clinical
Diagnosis, Care & Treatment

Academic commentary & research in peer-review journals

Scientific

FOOD ADDICTION?
Public perception of food addiction…

“Of course it exists!”

“Currently I've been binge eating every day now for almost the past month. At first it was only a couple days a week but now it's daily. Eating until I feel like I'm going to die. For me it's my coping mechanism for things in life. I believe it's a slow form of suicide and the same goes for alcoholics and drug addicts, I just choose food as my drug.” Anna B, 55.

http://www.foodaddictsanonymous.org foraums/
Support groups and self-help literature

Food Addicts Anonymous
Recovering together one day at a time from the biochemical disease of food addiction.

Est. 1987

Food Addicts in Recovery Anonymous
400 W. Cummings Park #1700 Woburn MA 01801 781.932.6300

Est. 1998

Overeaters Anonymous®

Est. 1960

Books:
- Food Addiction: The Body Knows
- Obsessed
- Conquer Your Food Addiction
- No More
What do you think is the main cause of obesity?

What is the ___________ treatment of obesity?

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Public Views on Food Addiction and Obesity: Implications for Policy and Treatment

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To what extent do you agree with the following statement?

Addiction to certain foods causes obesity.  % of sample

Certain foods are addictive.  % of sample

Sugar is addictive.  % of sample

Some foods can be as addictive as alcohol, nicotine and cocaine.  % of sample

Obesity should be treated as an addiction.  % of sample
Public perception of food addiction...

- Food addiction is real and foods can be addictive
- Resonates with personal experience and relationships with food and eating – popular explanation for obesity
- “Addiction” has entered into common usage but often to mean *any* activity done to excess
  - E.g. TV, Shopping, Mobile Phone, Work, Plastic Surgery!
  - Metaphor vs. medical condition
- View is reinforced by reporting of Food Addiction in the media
  - 1000-2000 new articles per month containing term “Food addiction”
  - Often prompted by academic press releases
  - Frequently reported with reference to “junk food”, general obesity and illegal drug use

1 Lee et al. 2013 PLoS One
2 Google News Search Jul-Oct 2013
Clinical perspectives on Addiction…

Is Internet addiction a useful concept?

Vladan Starcevic

The Internet is utilised by hundreds of millions of people worldwide, with its numerous benefits only leading to an increase in the number of users. But there is a dark side to the...

What is addiction?
Addiction does not appear as a diagnosis in the diagnostic and classification systems such as the Diagnostic and Statistical Manual of Mental Health (Alexander, 2008: 45). Likewise, the American Society of Addiction Medicine (2011) has defined addiction as ‘impairment in behavioural control, craving and diminished recognition...

Some Problems with the Concept of “Gambling Addiction”: Should Theories of Addiction Be Generalized to Include Excessive Gambling?

Michael B. Walker
University of Sydney, Australia

Sex addiction as a mental health diagnosis: Coming together or coming apart?

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Addicted to ‘addiction’?†

Iain D. Smith

COMMENTARY ON… SHOPPING ADDICTION AND INTERNET SEX ADDICTION

† Addicted to ‘addiction’? Commentary on… shopping addiction and internet sex addiction

Journal of Gambling Behavior Vol. 5(3), Fall 1989
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Clinical perspectives on Addiction...

- Which addictions are “real” and which are not extremely important for Psychiatrists, Doctors, Policy makers, Regulatory bodies, Pharmaceutical and Insurance Industries – Health and Financial Imperative

- APA’s Diagnostic and Statistical Manual “Bible of Psychiatry” is most influential point of reference for diagnosis of addiction
  - “Substance-related and addictive disorders”

- WHO publish International Classification of Diseases (ICD-10)
  - “Mental and behavioural disorders due to psychoactive substance use”

- Increasingly bio-medical definition (DSM-I: “Sociopathic Personality Disturbance”)
Diagnostic and Statistical Manual …

- No mention of “addiction”
- “Substance-Related Disorders” (1. Substance-abuse and 2. Substance-dependence)
  - 10 categories of substance (exc. caffeine and nicotine)
  - Dependence = 3+ symptoms (max 7) with significant impairment or distress
  - With or without physiological dependence (tolerance/withdrawal)
  - Binge Eating Disorder noted as requiring further research
  - Food Addiction NOT included

- Substance-Related and Addictive Disorders
  - Continuum of severity: Mild = 2, Moderate = 4, Severe = 6 symptoms (max 11)
  - “Dependence” seen as normal bodily response to a substance
  - Gambling disorder included as sole behavioural addiction
  - BED recognised as Feeding and Eating Disorder
  - Internet use disorder noted as requiring further research
  - Food addiction still NOT included
Clinical perspectives on Food Addiction…

• Recognition and treatment of “Behavioural Addictions” such as Food Addiction is highly controversial.

• Problems with definition:
  - Clear characterisation of addictive substance or medium needed.
  - Diagnostic threshold: Broad “inclusive” versus Narrow “categorical” viewpoints.
  - Problems with overlap/distinction from existing disorders:
    - Overlap with Addictive Disorder symptoms must be more than superficial or metaphorical.
    - Distinction needed from existing (e.g. BED, BN) or symptom of primary underlying disorders (e.g. not secondary to Obesity, Depression, etc.)

• Problem of validity versus reliability:
  - The strength of DSM has been “reliability” – to ensure clinicians use the same terms in the same ways. The weakness is its lack of validity – common symptoms may have different causes and treatments. ‘The strength of DSM has been “reliability” – to ensure clinicians use the same terms in the same ways. The weakness is its lack of validity – common symptoms may have different causes and treatments.”
  - For research purposes, we need new ways of classifying mental disorders based on dimensions of observable behavior and neurobiological measures.”

National Institute of Mental Health Director Thomas Insel, M.D.
Clinical perspectives on Food Addiction…

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National Institute of Mental Health Director Thomas Insel, M.D.
Scientific Debate on Food Addiction...

- Concept of Food Addiction is not new\(^1\)
- Development of scientific literature has been sporadic\(^2\)
- Recent explosion of research and debate\(^3\) on ‘food addiction’ in scientific literature
  - Animal models of sugar and “junk food” addiction\(^4,5\)
  - Development of \textbf{Yale Food Addiction Scale}\(^6\)

\[^1\] Fraser (2012)
\[^2\] Fraser (2012)
\[^3\] Avena et al. (2008)
\[^4\] Johnson and Kenny (2010)
\[^5\] Gearhardt et al. (2011)
Psychometric measurement of “Food Addiction”

- DSM IV-TR criteria for “Substance Dependence”
- 10 specific substance-related addictions (e.g. alcohol, cocaine)
- ≥3 symptoms with impairment/distress
- Is it plausible that these criteria apply to food as a substance?

Previous 12 months:
- Taken in larger amounts for longer than intended
- Persistent desire and unsuccessful effort to cut down
- Continuing use despite physical or psychological problems
- Significant impairment or distress?

**TABLE 1. Diagnostic Criteria for Substance Dependence as Stated by the DSM-IV-TR**

1. Tolerance, as defined by either of the following:
   - The need for markedly increased amounts of the substance to achieve intoxication or desired effect.
   - Markedly diminished effect with continued use of the same amount of the substance.
2. Withdrawal, as manifested by either of the following:
   - The characteristic withdrawal syndrome for the substance.
   - The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.
3. Taking the substance often in larger amounts or over a longer period than was intended.
4. There is a persistent desire or unsuccessful effort to cut down or control substance use.
5. Spending a great deal of time in activities necessary to obtain or use the substance or to recover from its effects.
6. Giving up social, occupational, or recreational activities because of substance use.
7. Continuing the substance use with the knowledge that it is causing or exacerbating a persistent or recurrent physical or psychological problem.
Yale Food Addiction Scale

- ~75% human empirical studies on Food Addiction since 2009\(^1\)
- Based on DSM-IV criteria
- 1-4 items for each symptom
- Items endorsed by obesity and addiction experts and BED patients

Scoring
- Dichotomous diagnosis YES/NO (3+ criteria with impairment/distress)
- Symptom count (1-7 symptoms)

\(^1\)Medline OVID search

"The YFAS is a measure that has been developed to identify those who are most likely to be exhibiting markers of substance dependence with the consumption of high fat/high sugar foods."

"My behavior with respect to food and eating causes significant distress."

"I experience significant problems in my ability to function effectively (daily routine, job, social activities, health difficulties) because of food and eating."
Yale Food Addiction Scale - validation

- Scale validation: internet survey on 233 college students
  - Age = 20.1 ± 1.4 years
  - BMI = 22.6 ± 3.2 years
  - 74% normal weight, 3% obese
  - 11.4% met FA diagnosis
  - Median symptom count = 1
  - Persistent desire or un-successful effort to cut down endorsed by 71% sample
  - High internal reliability: α = .75
  - Convergent validity with Eating Disorder and Binge Eating Scales
  - Discriminant validity from Problem Alcohol Use Scales
YFAS – and beyond
Problems with psychometric assessment of “Food Addiction” for research

- Assumption that addiction is a stable, measurable concept
  - DSM IV-TR definition and diagnosis already modified and outdated
- Assumption that Food Addiction exists to be quantified
  - Circularity between validating “FA” concept with “FA” measure
- No clear threshold for ‘addictive’ versus ‘normative’ eating behaviour
- Loose behavioural criteria for FA symptoms – self report
- Overlap with existing scales for severity of Binge Eating, Disinhibition, Emotional Eating, Food Craving, etc.
  - Does it give any additional information?
  - Is it necessary or helpful to ‘medicalise’ common behaviours with diagnostic labels?
Problems with food as “drug”

• Validity of food addiction, misuse or abuse requires new categories of food – essential for survival
• No objective threshold for addictive potential of foods
• No link established between food addiction and ‘hyper-palatable’ food
  - “Top 10 addictive foods” identified by YFAS include staples like bread and pasta as well as high fat/sugar foods like chocolate and ice-cream
• Bread was found to be food “most difficult to control eating” in sample of obese “Food Addicts”

¹Gearhardt (2012) Yahoo Health
²Dalton et al. (2013) PhD thesis
Food Addiction, where now?

- Assumption that some foods are intrinsically addictive substances that induce the clinical features of drug addiction needs re-evaluation
  - Concept of addiction as exclusive to specific substances is changing
  - Shift in focus towards individual differences in behaviour and experience taken to pathological levels¹
- “Eating-related Addiction” or “Addiction-like eating behaviour” proposed to better describe overlap with “Substance-related and Addictive Disorders”²

¹Insel (2013) NIMH Directors’ Blog
²Dickson (2012) EUFP7 NeuroFAST consensus
The future of Food Addiction…

- An important subgroup of people may experience harm and impairment from extreme, “addiction-like” eating behaviour
- Research into causes, progression and treatment of this behaviour is needed
- Classification of food as an addictive substance and large numbers of people as ‘food addicts’ not appropriate
- Research on the full spectrum of individual differences in neurobiological processes influencing food choice and food intake is important. E.g:
  - Reward – explicit liking and implicit wanting
  - Mood – anxiety, depression, contentedness
  - Cognition – memory, attention, perception

“I never feel in control of my eating. I wake up in the morning feeling full and like crap because I ate so much the night before. Last night I had, rice with soup over it, mashed potatoes, two klondike bars, a big piece of chocolate cake, egg nog, big handful of ginger snaps and ramen noodles…I can’t stand it :( It makes me sick thinking about all the food I put down” Brian D, 32.

http://www.foodaddictsanonymous.org/forums/
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Thank you