Overlap between Food Addiction and DSM-5 Eating Disorders

in a treatment seeking sample for substance-related and addictive disorders

1

M.C. Rosa [2,1],
J. Collombat [2],
C.M. Denis [3, 2],
J. Alexandre [2],
F. Serre [2],
M. Auriacombe [2],
M. Fatseas [2]

2

---

1. Center for Drug and Alcohol Research, Federal University of Rio Grande do Sul,
   Porto Alegre, Rio Grande do Sul, Brazil
2. Addiction Psychiatry (CNRS USR 3413), Universite Bordeaux, Bordeaux, France
3. University of Pennsylvania, Philadelphia, PA, United States

Conflict of Interest: None

3

Introduction (1)

- Food Addiction (FA)
  - Is recently receiving widespread attention
  - Used to describe an abnormal pattern of excessive consumption of hyperpalatable foods (Gearhardt, Yokum et al. 2011)
  - Evidences of FA
    - Robust in animal models (Avena, Bocarsly et al. 2012)
    - Few in human studies (Flint, Gearhardt et al. 2014)
  - FA could be a more severe expression of binge eating disorders (Davis, 2013)
  - To date, there is no consensus that FA concept is valuable (Gearhardt and Brownell 2013)

4

Introduction (2)

- Eating Disorder (ED) (APA 2013)
  - Bulimia
  - Anorexia nervosa
  - Binge eating disorder

5

Objective

- To verify possible overlap between DSM-5 Eating Disorders and Food Addiction
  - in a substance-related and addictive disorders sample

6

Methods

- Individuals enrolled in the Aquitaine Addiction Cohort (France)
  - Seeking treatment for at least one substance use disorder or non-substance addictive disorder (e.g. gambling)
- Assessment
  - MINI (Mini International addictive disorders of DSM-5 adapted for Food AdNeuropsychiatric Interview)
    - Diagnostic of Eating Disorders: binge eating disorder, bulimia, anorexia
    - Other psychiatric disorders: substance use disorder, gambling disorder, mood disorders, anxiety disorders
  - Food Addiction diagnostic criteria
    - 11 criteria for substance-related and diction (FA)
    - FA diagnosis: 2+ criteria met
    - Severity of the diagnosis: 2 - 3 criteria: Mild
      4 - 5 criteria: Moderate
      6+ criteria: Severe

7

Food Addiction Diagnostic Criteria (1)

1. Have you found that you needed to consume more to get the same effect that you did when you first started taking it? (i.e:pleasure anxiolytic, de-stressing, ...)
2. When you reduced or stopped consuming, did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable or depressed)? Did you consume something to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better?
3. Have your often found that when you consumed, you ended up taking more than you thought you would?
4. Have you tried to reduce or stop consuming, but failed?
5. On the days that you consumed, did you spend substantial time (> 2 hours) in obtaining, using or in recovering from drug(s), or thinking about food?

8

Food Addiction Diagnostic Criteria (1)

6. Did you spend less time working, enjoying hobbies, or being with family or friends because of your consuming of food (abandonment of an activity because it took place in a context where you could not eat ...) ?
7. Have you continued to consume even though it caused you health (diabetes, increased cholesterol, triglycerides, hypertension, weight gain, tooth decay, stomach pain,...) or mental problems?
8. Have you felt bad from consuming food more than once, when you had other responsibilities at school, at work, or at home? Did this cause any problem?
9. Have you consumed food in any situation where you were physically at risk, (for example, driving a car, using machinery, risk of suffocation, etc.)?
10. Did you continue to consume even though it caused problems with your family or other people?
11. Did you experience a persistent desire / an irrepressible desire to consume food?

9

Food Addiction Diagnostic Criteria (1)

1. Avez-vous constaté que vous deviez en consommer de plus grandes quantités pour obtenir le même effet qu'auparavant ? (ex: plaisir, anxiolytique, déstressant,..)
2. Lorsque vous en consommiez moins, ou arrêtiez d'en consommer, aviez-vous des symptômes de manque (douleurs, tremblements, fièvre, fébrilité, diarrhée, nausée, transpiration, accélération du cœur, difficultés à dormir, ou se sentir agiter(e), anxieux (se), frustration ou colère, irritable ou déprimé(e), difficulté de concentration, instabilité de l'humeur...) ? Ou vous arrivait-il de consommer autre chose pour éviter d'être mal ou pour vous sentir mieux ?
3. Vous arrivait-il souvent lorsque vous commenciez à en consommer, de consommer plus que vous n'en aviez l'intention ?
4. Avez-vous essayé, sans y arriver, de réduire votre consommation ou d'arrêter d'en consommer ?
5. Les jours où vous en consommiez, passiez-vous beaucoup de temps (>2 heures) à essayer de vous en procurer, à en consommer, à vous remettre de ses (leurs) effets, ou à y penser ?

10

Food Addiction Diagnostic Criteria (2)

6. Avez-vous réduit vos activités (loisirs, travail, quotidiennes) ou avez-vous passé moins de temps avec les autres parce que vous consommiez (par exemple abandonner une activité parce qu'elle avait lieu dans un contexte où vous ne pouviez pas consommer...) ?
7. Avez-vous continué à consommer tout en sachant que cela entraînait chez vous des problèmes de santé (ex: diabète, augmentation du cholestérol, des triglycérides, hypertension, prise de poids, dégradation dentaire, douleur d'estomac...) ou des problèmes psychologiques ?
8. Vous êtes-vous à plusieurs reprises senti(e) mal physiquement après la consommation alors que vous aviez des choses à faire au travail/à l'école ou à la maison ? Cela a-t-il posé des problèmes ?
9. Vous est-il arrivé de consommer l'aliment dans une situation où cela était physiquement risqué comme manger en conduisant, en utilisant une machine dangereuse, en étant allonge (risque d'étouffement) ?
10. Avez-vous continué à consommer tout en sachant que cela entraînait des problèmes avec votre famille ou votre entourage ?
11. Avez-vous éprouvé un désir persistant / une envie irrépressible de consommer ?

11

Results – Sample characteristics

- N= 165
- Males: 65.5%
- Age: 38.3 y.o.
- Normal weight: 47%
- Substance use disorder: 89%
- A minority sought treatment for eating disorder (7.9%)
  - Mainly for binge eating disorders
- FA diagnosis: 23%

12

Slide 13

Table 1- General characteristic sample

Characteristics	N	%
Gender		
Male	108	65.5
Age		
Mean age	38.33 years SD=11	
BMI		
Underweight	12	7.3
Normal weight	77	**47.0**
Pre-obese	51	31.1
Obese	24	14.6

Table 2- Psychiatric characteristic sample

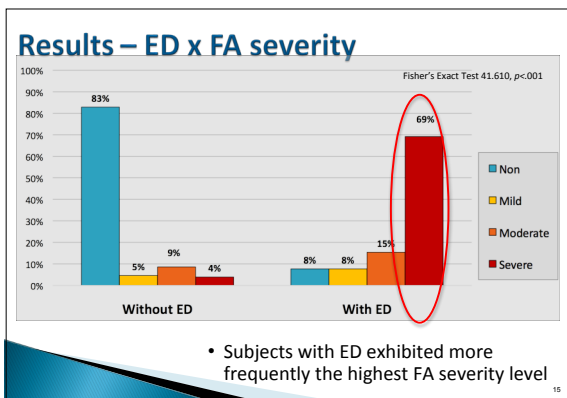| Characteristics	N	%
SUDs (DSM-IV)		
Yes	147	**89.1**
Eating Disorders (ED)		
Yes	13	**7.9**
Anorexia	1	0.6
Bulimia	3	1.8
Binge Eating Disorders	10	6.1
Food Addiction (DSM-5)		
Yes	38	**23.0**
Mild	8	4.8
Moderate	15	9.1
Severe	15	9.1
Other psychiatric comorbidities		
Yes	85	**51.5**

Slide 14

Results – Correlation between FA and ED

- 92.3% of subjects with ED presented Food Addiction

- 17.1% of subjects without ED presented Food Addiction

Fisher's exact test: 31.935 $p < .001$

- 31.6% of subjects with Food Addiction presented ED

- 0.8% of subjects without Food Addiction presented ED

Fisher's exact test: 31.935 $p < .001$

Slide 15

Results – ED x FA severity

Fisher's Exact Test 41.610, $p < .001$

- Subjects with ED exhibited more frequently the highest FA severity level

Slide 16

Conclusions

- Subjects with Eating Disorders were more likely
  - To meet Food Addiction diagnosis
  - To present the most severe level of Food Addiction
  - Only few subjects without FA reported Eating Disorders
- Food Addiction diagnosis is highly associated with DSM Eating Disorders
- Food Addiction might overlap with some diagnoses

Slide 17

References

1. Gearhardt, A. N., S. Yokum, P. T. Orr, E. Stice, W. R. Corbin and K. D. Brownell (2011). "Neural correlates of food addiction." Arch Gen Psychiatry **68**(8): 808-816.

2. Avena, N. M., M. E. Bocarsly and B. G. Hoebel (2012). "Animal models of sugar and fat bingeing: relationship to food addiction and increased body weight." Methods Mol Biol **829**: 351-365.

3. Davis, C. (2013). "From passive overeating to "food addiction": a spectrum of compulsion and severity." ISRN Obes **2013**: 435027.

4. Flint, A. J., A. N. Gearhardt, W. R. Corbin, K. D. Brownell, A. E. Field and E. B. Rimm (2014). "Food addiction scale measurement in 2 cohorts of middle-aged and older women." Am J Clin Nutr.

5. Gearhardt, A. N. and K. D. Brownell (2013). "Can food and addiction change the game?" Biol Psychiatry **73**(9): 802-803.

6. American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders : DSM-5. Washington, DC American Psychiatric Association.

Slide 18

Contacts

Marc Auriacombe
marc.auriacombe@u-bordeaux.fr

Marco Aurélio Camargo da Rosa
plmhooters@yahoo.com

Cecile Denis:
cecile.denis@u-bordeaux.fr

Abstract

Although the diagnosis of Food Addiction (FA) is not formally recognized, some studies showed that DSM-5 criteria for substance use disorder (SUD) might be transferable to FA.

Aim: We aimed to verify possible overlap between DSM-5 eating disorders (Anorexia, Bulimia and Binge Eating Disorder) and FA.

Methods: In 2014, consecutive patients enrolled in an addiction treatment program in Bordeaux, France were assessed with the ASI modified to include eating behaviors, the Mini International Neuropsychiatric Interview for psychiatric disorders including DSM-5 criteria for SUD, gambling, eating disorders (ED) and FA criteria based on DSM-5 criteria for SUD.

Results: 165 patients were enrolled, 65.5% males, mean age 38.3yrs (SD=11), 45.7% overweight (BMI≥25), 89.1% with SUDs, 6.8% with gambling, 51.5% with other psychiatric comorbidities. 7.9% met a DSM-5 eating disorder diagnosis. FA diagnosis was met by 23% of the entire sample (4.8% mild, 9.1% moderate, 9.1% severe). Those patients met an average of 5.1 criteria out of 11 (SD=2.1) and the most endorsed were "larger amounts than intended" (91%), "craving/strong desire" (81%) and "unsuccessful efforts to cut down" (73%). Patients with DSM-5 Eating disorders were more likely to meet FA diagnosis (92.3% vs 17.1%, p<.001) and individuals with FA met more ED (32% vs 0.8%, p<.001). No association between FA diagnosis and the others psychiatric comorbidities was found except for ADHD.

Conclusions: FA diagnosis is highly associated with DSM-5 eating disorders and might overlap with some diagnoses. Patients with FA exhibited impairment comparable to SUD patients. Further studies are needed to address the validity of FA diagnosis using the DSM-5 SUD criteria.