

Measuring “Craving” in Food Addiction: Type, Frequency and Intensity

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SANPSY
SOMMEL, ATTENTION, NEUROPSYCHIATRIE

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Introduction (1)

- Craving
 - Strong desire or urge to use a substance
 - Added as a criteria in the DSM-5 substance-related and addictive disorders (APA, 2013)
- Food Craving
 - Strong desire or urge to eat a specific food
 - Associated with food rich in added sugar and/or fat (hyperpalatable foods) (Mela and Rogers 2013)

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Introduction (2)

- Food Addiction
- Many similarities between substance use disorders (alcohol, cocaine) and excessive consumption of hyper-palatable foods
 - Increase in dopamine brain reward pathways (Di Chiara, 2007)
 - Tolerance to their rewarding properties by the down-regulation of dopamine receptors in the striatum (Volkow, 2002)
 - Decrease in the function of the extended amygdala reward system, which produces the negative affect an anxiety associated with abstinence (Koob, 2006)

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Objective

- To assess craving for food
 - in patients with Substance Use Disorder or other addictive disorders

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Methods (1)

- 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 Neuropsychiatric 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 addictive disorders of DSM-5 adapted for Food Addiction (FA)
 - FA diagnosis: 2+ criteria met
 - Severity of the diagnosis: 2 - 3 criteria: Mild
4 - 5 criteria: Moderate
6+ criteria: Severe

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Methods (2)

- Assessment (cont')
 - Craving
 - Type: "Sweet", "Fat" or "Sweet and Fat"
 - Frequency: Number of days past 30 days
 - Intensity: Score 0 – 10
 - Body Mass Index (BMI)
 - WHO Classification
 - Underweight: <18.5
 - Normal weight: 18.5 – 24.9
 - Pre-obese: 25.0 – 29.9
 - Obese: >30.0

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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%

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Table 1- General characteristic sample

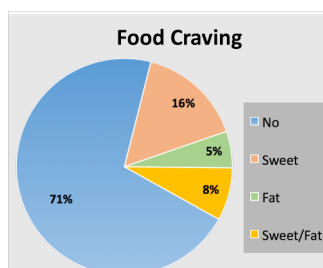
Characteristics	N	%
Gender		
Male	108	65.5
Age		
Mean age	38.3 years	
	SD=11	
BMI		
Underweight	12	7.3
Normal weight	77	47.0
Pre-obese	51	31.1
Obese	24	14.6

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

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Results – Craving for food (1)



- 29% reported at least one day of food craving in the past 30 days

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Results – Craving for food (2)

Craving	Frequency (past 30 days)			Average Intensity			Maximum Intensity		
	mean	median	SD	mean	median	SD	mean	median	SD
Sweet only	10.65	4.5*	10.90	6.52	7.0	2.43	7.52	8.0	2.02
Fat only	9.44	5.0**	9.72	5.11	5.0	2.15	6.44	7.0	1.74
Both									
Sweet	13.69	7.0*	11.78	6.08	7.0	2.57	7.23	8.0	2.77
Fat	15.46	15.0**	10.88	6.31	6.0	2.39	7.77	9.0	2.68

*Mann-whitney U test: U= 149.50 p=.497; ** Mann-whitney U test: U= 56.00 p=.400

- No difference in average and maximum intensity of craving across food categories
- Individuals with food craving for "sweet and fat" substances reported more days of craving in the past 30 days
 - No significant difference
 - Between "sweet" and "sweet and fat"
 - Between "fat" and "sweet and fat"

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Results – Craving for food (3)

	Food Craving (%)	χ^2	P-value
Gender			
Male	24.1	3.814	.051
Female	38.6		
BMI			
Underweight	25.0	14.256*	.002
Normal	20.8		
Pre-obese	27.5		
Obese	62.5*		
Addiction			
One addiction	24.4	.067	.796
More than one	26.5		
Psychiatric comorbidities			
No	26.3	.608	.436
Yes	31.8		

▪ No difference was found for food craving by gender, number of addictions and Psychiatric comorbidities

▪ Obese individuals presented significantly more food craving than the other categories of BMI

*Fisher's exact test

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Results – Craving for food (4)

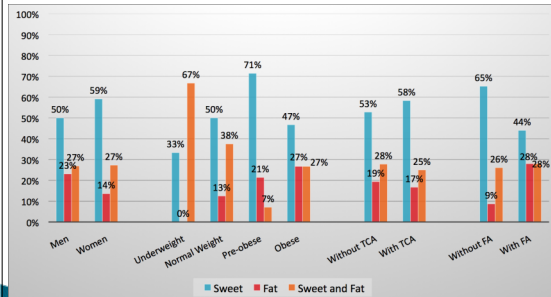
	Food Craving (%)	χ^2	P-value
Eating Disorder Diagnosis			
Yes	92.3	25.514*	<.001
No	23.7		
Food Addiction Diagnosis			
Yes	65.8	32.233	<.001
No	18.1		
Food Addiction Diagnosis			
No	18.1	32.447*	<.001
Mild	50.0		
Moderate	60.0		
Severe	80.0		

▪ Individuals with Eating Disorder or Food Addiction diagnosis reported significantly more craving for food

*Fisher's exact test

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Results – Craving for food by food categories



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Results – Craving for food, ED, FA

	b	SE	P-value	Odds ratios	OR 95% CI Lower	OR 95% CI Upper
Gender						
Women	.119	.427	.780	1.127	.488	2.602
BMI						
Underweight	.439	.758	.563	1.550	.351	6.854
Pre-obese	.346	.457	.449	1.413	.577	3.461
Obese	.537	.650	.409	1.711	.478	6.121
Eating Disorders						
Yes	2.475	1.131	.029	11.881	1.296	108.949
Food Addiction						
Yes	1.500	.490	.002	4.482	1.715	11.709

Note: CI: Confidence interval; Reference values for each category: Men, Normal Weight, No eating disorder, No Food Addiction

▪ Individuals with ED and FA had, respectively, 11.8 and 4.5 times more likely to report craving for food than individuals without ED and FA

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Conclusions

- Craving for food is common
 - Almost one third of the sample reported in the past 30 days
- Craving for sweet was more frequently reported
 - Compared to craving for fat
- The intensity of craving did not differ according to
 - Food categories (fat, sweet, sweet & fat)
 - Gender
 - Eating disorder or food addiction diagnoses
- Subjects with Eating disorder or Food Addiction were more likely to report Craving for food
- Craving appeared to be a frequently endorsed criterion in Food Addiction
 - Like in other addictive disorders
 - Provide further support for the plausibility of the existence of the construct of FA

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Abstract

Craving was included in the DSM-5 diagnostic criteria for substance use disorders (SUD). Some studies showed Food Addiction (FA) might be diagnosed using DSM-5 criteria adapted from SUD. **Aim:** The aim of this study was to assess craving for food in patients with SUD or other addictive disorders.

Methods: Consecutive subjects who sought treatment for at least one addiction (substance and non-substance) in outpatient addiction clinics in Bordeaux (France) were evaluated with the Mini International Neuropsychiatric Interview adapted for DSM-5 eating disorders, craving and FA adapted from DSM-5 SUD. Craving for sweet and fat was assessed with a VAS.

Results: 165 patients were enrolled, mainly men (65.5%), mean age 38.3 yrs (SD=11), 45.7% overweight (BMI≥25), 7.9% met eating disorders diagnosis and 23% met FA diagnosis. Craving for food was reported by 29% of the entire sample (16% for sweet, 5% for fat and 8% for sweet and fat). In past 30 days, the median of days for which patients reported craving for fat was 8 and 10 for craving for sweet. The average intensity of craving for fat was 5.4 out of 10 (SD= 2.3), and 6.3 out of 10 (SD=2.3) for sweet. Patients with ED were more likely to report craving (92.3% vs 23.7%; $p<.001$) and presented more likely craving for both sweet and fat ($p<.001$ and $p=.002$, respectively). Similarly, patients with FA were more likely to report craving (65.8% vs 18.1%; $p<.001$) and presented more likely craving for both sweet and fat ($p<.001$ and $p<.001$, respectively). Severity of FA, was related to frequency of craving in past 30 days for sweet (Mild= None, Moderate= 13 d, Severe= 30 d) and for fat (Mild= 2 d, Moderate= 10 d, Severe= 10 d), but not with craving intensity.

Conclusions: Craving appeared to be a frequently endorsed criterion in FA like in other addictive disorders. These results provide further support for the plausibility of the existence of the construct of FA.

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