Differences in Demographic Characteristics, Early Puberty, EDs, and SUDs Between College Individuals With and Without Food Addiction

UNC COLLEGE OF ARTS AND SCIENCES Psychology and Neuroscience

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Background

- Defined as compulsively seeking out and overeating highly palatable foods despite negative life consequences [10]
- Not included in DSM-5-TR [1]
- Controversial in eating disorder and substance use disorder communities
- A plethora of research supports its existence and impact [2,3,7,10,12,14]

Population Prevalence and Demographics

- General population prevalence of ~ 20.0%, but studies have found a wide range of prevalence [12]
- Mixed results on how prevalence of FA is impacted by race [3,4,5]
  - Many studies have primarily White samples
- Mixed results on how prevalence of FA is impacted by sex [2,13]
- Higher prevalence of FA in populations that are underweight or overweight/obese than normal weight populations [8,14]

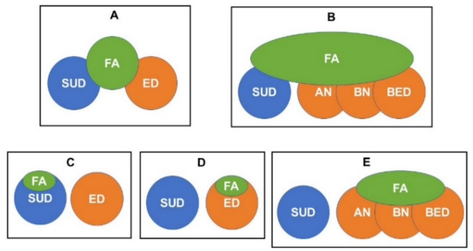
Eating Disorders and Food Addiction

- Food addiction shares characteristics with multiple disordered eating phenotypes
- Shares many symptoms with Binge Eating Disorder (BED) [2]
- Heightened prevalence of FA among individuals with EDs
  - FA prevalence ranges from 41.5% to 56.8% in BED populations and 30.0% to 83.6% in BN populations [7,10]

Substance Use Disorders and Food Addiction

- FA shares common behavioral characteristics and neurobiological mechanisms with SUDs [11,12]
  - Behavioral similarities - physical dependence, social problems, risky use, and impaired control [12]
  - Neurobiological similarities - alterations in reward pathways, dopamine signaling, and executive function mechanisms [12]
- Heightened FA prevalence in populations with Alcohol Use Disorder and Drug Use Disorder [11]

How does FA relate to EDs and SUDs?



Food Addiction and Early Puberty

- Early puberty is a risk factor for the development of EDs and SUDs, but no study has examined its association with FA [9]

Rationale for the Current Study

Emerging Adulthood and Food Addiction

- 95% of sample between 18-23 years old
- Peak age of onset for EDs and SUDs is late adolescence / emerging adulthood [10,11]

Obesity and Food Addiction

- Obesity is a public health crisis
- FA relates to the global obesity epidemic through the overconsumption of highly processed foods high in salt, sugar, or fat [6]
- Higher prevalence of FA in overweight/obese populations [8]

Aims

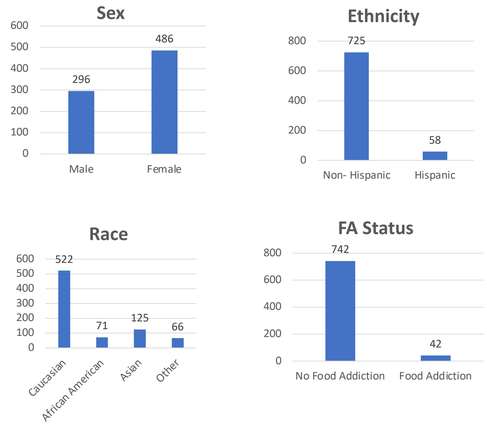
- Aim 1: Evaluate demographic characteristics of individuals with FA compared to those without FA
- Aim 2: Evaluate associations between early puberty and FA
- Aim 3: Evaluate disordered eating symptoms in those with and without FA
- Aim 4: Examine associations between substance misuse and FA

Participants and Procedures

Carolina C.A.R.E.S.

- Carolina College Assessment for Research and Education in Science
- Data collected in 2017
- After exclusions – 784 total participants
- Logistic regression models used to evaluate associations between all variables and FA
  - Imputation performed
  - FDR used to correct for multiple testing

Composition of My Sample



Methods

Demographics Survey

- Sex, race, and BMI (conceptualized as number and weight class)

Yale Food Addiction Scale (YFAS)

- 25 items that measure symptoms of substance-related and addictive disorders
- Scored as present (having FA) or absent (not having FA)

Pubertal Development Scale (PDS)

- Five items that inquire about pubertal timing in comparison to peers summed to create an overall puberty score
  - First quartile scored as present (early puberty), everyone else scored as absent (no early puberty)

Eating Pathology Symptoms Inventory (EPSI)

- Forty-five item measure that assesses eating pathology in the past four weeks
- Used all eight subscales (ex. Body dissatisfaction, purging)

Alcohol Use Disorders Identification Test (AUDIT)

- Ten item measure assessing past year alcohol misuse
- Used global score and three subscales:
  - Hazardous use/consumption, dependence symptoms, and harmful use

Drug Use Disorders Identification Test (DUDIT)

- Eleven item measure assessing drug-related problems in the past year

Results

		No FA n (%)	FA n (%)	χ^2 (df)	*q*-value	OR (95% CI)
Sex	Male (referent)	287 (96.96)	9 (3.04)	5.51 (1)	.026	2.32 (1.10; 4.93)
	Female	453 (93.21)	33 (6.79)			
Race	Caucasian	497 (95.21)	25 (4.79)	4.11 (2)	.159	**
	African American	*	*			
	Asian	113 (90.40)	12 (9.60)			
BMI-Group	Underweight	37 (92.50)	3 (7.50)	0.35	.840	**
	Normal Weight	520 (94.72)	29 (5.28)			
	Overweight/ Obese	185 (94.87)	10 (5.13)			
Early Puberty (Females)	No Early Puberty (referent)	355 (93.18)	26 (6.82)	0.00 (1)	1.00	0.98 (0.41; 2.31)
	Early Puberty	98 (93.33)	7 (6.67)			

Demographics

- Association between sex and FA
  - Females 132x more likely to have FA than males
- No association between race and FA
- No association between BMI and FA

Early Puberty

- No association between early puberty and FA

Results Cont.

		No FA Mean (SD)	FA Mean (SD)	χ^2 (df)	*q*-value	OR (95% CI)
Demographics	BMI-Continuous	23.16 (3.73)	23.16 (4.39)	0.00 (1)	1.00	1.00 (0.92; 1.09)
Disordered Eating Symptoms	Body dissatisfaction (range=0-28)	8.49 (6.96)	17.07 (5.97)	49.67 (1)	<.001	1.16 (1.11; 1.21)
	Binge eating (range=0-32)	6.25 (5.40)	16.29 (7.15)	81.33 (1)	<.001	1.22 (1.17; 1.28)
	Cognitive restraint (range=0-12)	4.49 (3.11)	7.17 (2.46)	27.97 (1)	<.001	1.30 (1.18; 1.44)
	Purging (range=0-24)	0.64 (1.95)	4.21 (5.13)	45.43 (1)	<.001	1.32 (1.22; 1.42)
	Restricting (range=0-24)	3.85 (4.43)	8.24 (6.57)	26.57 (1)	<.001	1.15 (1.09; 1.21)
	Excessive exercise (range=0-20)	5.67 (5.26)	9.64 (5.88)	19.45 (1)	<.001	1.13 (1.07; 1.19)
	Negative attitudes towards obesity (range=0-20)	4.78 (4.67)	7.86 (5.00)	14.48 (1)	<.001	1.12 (1.06; 1.18)
	Muscle building (range=0-20)	2.72 (3.53)	4.33 (4.02)	6.81 (1)	.014	1.10 (1.03; 1.18)
Alcohol Use	AUDIT global score	6.14 (4.85)	9.21 (5.94)	10.52 (1)	.002	1.11 (1.04; 1.17)
	Hazardous use/consumption	3.92 (2.58)	4.18 (2.22)	0.31 (1)	.660	1.04 (0.91; 1.19)
	Dependence symptoms	0.80 (1.39)	2.18 (2.37)	18.78 (1)	<.001	1.45 (1.24; 1.70)
	Harmful use	1.42 (1.81)	2.85 (2.57)	14.45 (1)	<.001	1.33 (1.16; 1.53)
Drug Use	Drug use	1.74 (3.89)	5.05 (8.25)	15.23 (1)	<.001	1.11 (1.06; 1.16)

- Associations between all eight disordered eating symptoms and FA
- Associations between overall alcohol misuse, dependence symptoms, and harmful use and FA
- Associations between drug use and FA

Discussion

Most Important Findings

- Females are more likely than males to have FA. → May be attributable to sex differences in body perception, gonadal hormones, and brain activity in regions controlling taste or craving
- All eight symptoms of disordered eating assessed were strongly associated with FA. → Indicates that the psychological symptoms of FA extend beyond its similarities with BED and BN
- FA was strongly associated with drug and alcohol misuse. → FA is commonly comorbid with AUD and DUD, and those with FA may feel the symptoms of substance addiction to a higher degree than those without FA

Limitations

- Small number of participants within FA group (n=42)
- Lack of racial diversity in sample
- Lack of men who underwent early puberty in sample

Recommendations

- Continue research into how FA impacts emerging adults
- Provide campus resources and information for those struggling with FA
- Campus health providers should screen for FA while treating SUDs or EDs

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