**“Co-Occurrence of Food Addiction, Obesity, Problematic Substance Use, and Parental History of Problematic Alcohol Use”**

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**Description:** The data set supports a study investigating rates of co-occurrence among food addiction (FA), problematic substance use (alcohol, cannabis, cigarettes, nicotine vaping), parental history of problematic alcohol use, and obesity as an important step to understanding whether an addictive-like eating phenotype exists. Participants (n = 357) were recruited from Amazon Mechanical Turk for a study on how past experiences (parental history, trauma) impact health behaviors (eating, substance use). Participants were asked to complete self-report measures on food addiction, personal substance use, and parental history of alcohol use. Participants also completed demographic questions and self-reported height and weight which were used to calculate BMI.

**Data Cleaning:** Analyses were conducted in IBM SPSS Statistics version 27(IBM Corporation, Armonk, NY). Data were reviewed for quality assurance and some data (n=29) were excluded from the dataset due to failed quality control checks (failed multiple check questions, completion in <10 minutes, etc.). This resulted in a final sample of 357 participants included in analyses. BMI data were excluded for some participants (n=22) due to improbable values (BMI <15 or >50). All other data for these participants were retained and only BMI data were excluded. Participant’s ability to skip individual questions resulted in some missing data *(n=*2 to *n*=25), which were removed from analyses using pairwise deletion.

**Methodology:** Pearson zero-order correlations were conducted to identify sociodemographic covariates (socioeconomic status, age, and sex at birth). Modified Poisson regression (with robust standard error estimations) were used to estimate risk ratios among food addiction, parental history of problematic alcohol use, personal substance use (alcohol, cannabis, cigarettes, nicotine vaping), and obesity. Significance was set at p<.05. However, given multiple testing, 99% CI estimates are reported in the final manuscript instead of 95% CI estimates. Unadjusted and adjusted (for sociodemographic covariates) analyses were conducted and presented in the manuscript.

**Conclusions:** Risk of food addiction was higher in participants with problematic alcohol, smoking, vaping, parental history of problematic alcohol use, and (in unadjusted only) cannabis use. Risk of food addiction was only higher in participants with obesity after adjusting for covariates. Obesity was not significantly associated with problematic substance use and parental history or problematic alcohol use. Thus, food addiction, but not obesity, co-occurred with problematic substance use and a family history of problematic alcohol use. Results support the conceptualization of food addiction as an addictive disorder.

More information about the data and the study can be found in the following publication:

Hoover, L. V., Yu, H. P., Cummings, J. R., Ferguson, S. G., & Gearhardt, A. N. (2022).

Co-occurrence of food addiction, obesity, problematic substance use, and

parental history of problematic alcohol use. *Psychology of Addictive Behaviors.* Advance online publication. DOI: 10.1037/adb0000870

**Scoring Information:** The following self-report measures were administered to assess participant problematic substance use and parental history of problematic alcohol use:

1. The Yale Food Addiction Scale 2.0 (YFAS2.0; Gearhardt et al., 2016) is a 35-item self-report measure of food addiction which is based off DSM-5 criteria for substance use disorders. The YFAS2.0 can be scored by summing the number of symptoms (0 to 11) to create one composite score or by using the DSM-5 diagnostic cutoff (2+ symptoms and clinical impairment). We used the DSM-5 criteria (2+ and clinical impairment) as a cutoff to dichotomize for whether participants met criteria for food addiction.
2. The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) is a 10-item self-report measure that screens for problematic alcohol use. The AUDIT can be scored by summing all items (with values 0 to 4) to result in an overall score of 0 to 40. We used a cutoff of 8 or higher to dichotomize for whether participants met criteria for problematic alcohol use.
3. The Cannabis Use Disorders Identification Test – Revised (CUDIT; Adamson et al., 2010) is an 8-item self-report measure that screens for problematic cannabis use. The CUDIT can be scored by summing all items (with values 0 to 4) to result in an overall score of 0 to 32. We used a cutoff of 8 or higher to dichotomize for whether participants met criteria for problematic cannabis use.
4. The Fagerstrom Test for Nicotine Dependence (FTND; Heatherton et al., 1991) is a 6-item measure of cigarette dependence. The FTND can be scored by summing all items for a score ranging from 0 to 10. We used a cutoff score of 4 or higher for whether participants met criteria for problematic smoking.
5. The E-Cigarette Dependence Scale – Brief Version (EDS; Morean et al., 2019) is a 4-item measure of e-cigarette dependence. The EDS is scored by summing all responses (each item ranges from 0 to 5) for an overall score of 0 to 20. We used a cutoff score of 4 or higher for whether participants met criteria for problematic nicotine vaping.
6. The Family Tree Questionnaire (FTQ; Mann et al., 1985) is a brief measure of family history of problematic alcohol use. Participants were asked to indicate whether each biological parent was a possible or definite problem drinker (as opposed to a social drinker or abstainer). Participants indicating 1 or more biological parent was a possible or definite problem drinker were indicating as meeting criteria for parental history or problematic alcohol use.

More information about these measures can be found in the following articles:

Adamson, S. J., Kay-Lambkin, F. J., Baker, A. L., Lewin, T. J., Thornton, L., Kelly, B. J., & Sellman, J. D. (2010). An improved brief measure of cannabis misuse: The Cannabis Use Disorders Identification Test-Revised (CUDIT-R). *Drug and Alcohol Dependence*, *110*(1), 137-143. https://doi.org/10.1016/j.drugalcdep.2010.02.017

Gearhardt, A. N., Corbin, W. R., & Brownell, K. D. (2016). Development of the Yale Food Addiction Scale Version 2.0. *Psychol Addict Behav*,*30*(1), 113-121. <https://doi.org/10.1037/adb0000136>

Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerstrom, K.-O. (1991). The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction*, *86*(9), 1119-1127. https://doi.org/10.1111/j.1360-0443.1991.tb01879.x

Mann, R. E., Sobell, L. C., Sobell, M. B., & Pavan, D. (1985). Reliability of a family tree questionnaire for assessing family history of alcohol problems. *Drug and Alcohol Dependence*, *15*(1-2), 61-67.

Morean, M. E., Krishnan-Sarin, S., Sussman, S., Foulds, J., Fishbein, H., Grana, R., & O'Malley, S. S. (2019). Psychometric Evaluation of the E-cigarette Dependence Scale. *Nicotine & Tobacco Research*, *21*(11), 1556-1564. https://doi.org/10.1093/ntr/ntx271

Saunders, J. B., Aasland, O. G., Babor, T. F., De La Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-II. *Addiction*, *88*(6), 791-804. https://doi.org/10.1111/j.1360-0443.1993.tb02093.x

Demographics:

1. Age (Put 999 if you prefer not to answer): [text box]
2. Sex at birth
	1. Male (0)
	2. Female (1)
	3. Other (2)
	4. Prefer not to answer (-888)
3. Gender identity
4. Male (0)
5. Female (1)
6. Transgender Female (2)
7. Transgender Male (3)
8. Non-binary (4)
9. Not listed: text box (5)
10. Prefer not to answer (-888)
11. Sexual orientation
12. Heterosexual (1)
13. Gay or lesbian (or homosexual if you identify with this term) (2)
14. Bisexual (3)
15. Pansexual (4)
16. Asexual (5)
17. Queer (6)
18. Other: text box (7)
19. Prefer not to answer (-888)
20. What race / ethnicity do you consider yourself to be? Select one or more of the following.
21. American Indian or Alaska Native
22. Hispanic / Latino
23. Asian
24. Native Hawaiian or Other Pacific Islander
25. Black or African American
26. White
27. Other: [Text Box]

\*RaceEthn\_# are coded 0 = not endorsed 1 = endorsed

 \_1 = American Indian or Alaska Native

 \_2 = Hispanic/Latinx

 \_3 = Asian

 \_4 = Native Hawaiian or Other Pacific Islander

 \_5 = Black or African American

 \_6 = White

 \_7 = Other

 \_8 = prefer not to answer

1. What is the highest level of education you’ve obtained?
2. Less than High School (1)
3. High School Degree (2)
4. Some college (3)
5. Associates Degree (4)
6. Bachelor’s Degree (5)
7. Advanced Degree (e.g. Masters, Ph.D, M.D., J.D.) (6)
8. Prefer not to answer (-888)
9. What is your height in feet?
10. 3 (3)
11. 4 (4)
12. 5 (5)
13. 6 (6)
14. 7 (7)
15. Prefer not to answer (-888)
16. What is your height in inches
17. 0 (0)
18. 1 (1)
19. 2 (2)
20. 3 (3)
21. 4 (4)
22. 5 (5)
23. 6 (6)
24. 7 (7)
25. 8 (8)
26. 9 (9)
27. 10 (10)
28. 11 (11)
29. Prefer not to answer (-888)
30. What is your weight in **pounds** (enter 999 for prefer not to answer)
31. [Text box]
32. What is your household income? Household is defined by your permanent residence
	* 1. Less than $10,000 (1)
		2. $10,000 - $19,999 (2)
		3. $20,000 - $29,999 (3)
		4. $30,000 - $39,999 (4)
		5. $40,000 - $49,999 (5)
		6. $50,000 - $59,999 (6)
		7. $60,000 - $69,999 (7)
		8. $70,000 - $79,999 (8)
		9. $80,000 - $89,999 (9)
		10. $90,000 - $99,999 (10)
		11. $100,000 - $149,999 (11)
		12. More than $150,000 (12)
		13. Prefer not to answer (-888)
33. Socioeconomic status was measured using the MacArthur Scale of Subjective Social Status (Adler et al., 2000) which is a single-item measure that represents perception of rank relative to others.

Think of this ladder as representing where people stand in the United States. At the top of the ladder are the people who are the best off – those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are the worst off – those who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people who are best off. Where would you place yourself on this ladder?

* + 1. 1 (1)
		2. 2 (2)
		3. 3 (3)
		4. 4 (4)
		5. 5 (5)
		6. 6 (6)
		7. 7 (7)
		8. 8 (8)
		9. 9 (9)
		10. 10 (10)
		11. Prefer not to answer (-888)

More information about this measure can be found in the following article:

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of

subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women., Health Psychology, 19(6), 586. <https://doi-org.proxy.lib.umich.edu/10.1037/0278-6133.19.6.586>

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| --- |
| **Variable Key** |
| **Variable Name** | **Description** | **Code Key** |
| PID | Participant ID number | N/A |
| Age | Age at time of participation | 999 = prefer not to answer  |
| Sx\_B | Sex assigned at birth | 0 = male; 1 = female; 2 = Other; -888 = prefer not to answer |
| Gen\_Id | Gender identity  | 0 = male; 1 = female; 2 = Transgender female 3 = Transgender male; 4 = Non-binary; 5 = not listed; -888 = prefer not to answer |
| Sx\_Orien | Sexual Orientation | 1 = Heterosexual; 2 = Gay or Lesbian; 3 = Bisexual; 4 = Pansexual; 5 = Asexual; 6 = Queer; 7 = Other; -888 = prefer not to answer |
| RaceEthn\_# | Race/Ethnicity (1= American Indian or Alaska Native, 2=Hispanic/Latinx, 3=Asian, 4=Native Hawaiian or Other Pacific Islander, 5=Black or African American, 6=White, 7=Other, 8 = prefer not to answer) | 0 = not endorsed; 1 = endorsed  |
| Educa | Education | 1=less than high school; 2 = high school degree; 3 = some college; 4 = associates degree; 5 = bachelors; 6 = advanced degree; -888 = prefer not to answer |
| Income | Income | 1 = less than $10,000; 2 = $10,000-$19,999; 3 = $20,000-$29,000; 4 = $30,000-$39,000; 5 = $40,000-$49,000; 6 = $50,000-$59,000; 7 = $60,000-$69,000; 8 = $70,000-$79,000; 9 = $80,000-$89,000; 10 = $90,000-$99,000; 11 = $100,000-$149,000; 12 = More than $150,000; -888 = prefer not to answer |
| Standing | Socioeconomic status (ladder measure) | 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, 10=10, -888 = prefer not to answer |
| BMI\_WC\_Exclude | BMI by weight class using BMI\_Ex variable | -666 = removed due to improbable value (<15 or >50)-888 = prefer not to answer on height and/or weight question |
| BMI\_Ex | BMI excluding outlier participants (coded -666) | -666 = removed due to improbable value (<15 or >50)-888 = prefer not to answer on height and/or weight question |
| BMI\_OB\_Exclude | BMI dichotomized (0=not obese, 1 = obese) using BMI\_Ex variable  | -666 = removed due to improbable value (<15 or >50)-888 = prefer not to answer on height and/or weight question |
| YFAS\_Sym | YFAS Symptom composite score | -888 = prefer not to answer |
| FoodDepMet | Dichotomized YFAS score cutoff met? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |
| AUDIT\_Sum | AUDIT sum score | -888 = prefer not to answer |
| AUDIT\_Problem | Dichotomized AUDIT score cutoff met? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |
| CUDIT\_Sum | CUDIT Sum score | -888 = prefer not to answer |
| CUDIT\_Problem | Dichotomized CUDIT score cutoff met? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |
| FTND\_Sum | FTND Severity score | -888 = prefer not to answer |
| FTND\_Smoker\_cut4 | Dichotomized FTND score cutoff met? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |
| ECIG\_Sum | ECig dependency sum score | -888 = prefer not to answer |
| ECig\_Smoker\_cut4 | Dichotomized ECig score cutoff met? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |
| FTQ\_Parents\_Sum | FTQ parents sum score (0, 1 or 2) | -888 = prefer not to answer |
| FTQ\_Parents\_YorN | Dichotomized FTQ parental history? (0=no, 1=yes) | 0 = cutoff criteria not met; 1 = cutoff criteria met; -888 = prefer not to answer |

**Note:** -777 was included to code for any “missing data – other” but was not utilized

**Analyses:** Data and Syntax are publicly available for verifying data analyses (please see Deep Blue Code Co-Occurrence FA, Obesity, Substance, Parent Hx Paper 6.28.22).

**Files Uploaded:**

* Deep Blue Code Co-Occurrence FA, Obesity, Substance, Parent Hx Paper (SPSS code for verifying data analysis of published work)
* Deep Blue Co-Occurrence FA, Obesity, Substance, Parent Hx.sav (SPSS dataset for verifying data analysis of published work)
* Deep Blue Co-Occurrence FA, Obesity, Substance, Parent Hx.csv (.csv file of dataset for verifying data analysis of published work)

Questions may be sent to the corresponding author Lindzey V. Hoover (lindzeyh@umich.edu).