

The Role of Empathy and Parental Modeling in Food Addiction

Ashley-Ann V. Francis, Valley Stream South High School, Valley Stream, NY

E-mail: francis1807@gmail.com

Abstract

The dietary choices and habits of parents have often been linked to the behaviors that their children develop. It is understood that one's relationship with food is influenced by a host of factors including family and emotions. Previous studies on the child-parent relationship have failed to acknowledge the magnitude of a child's perception of their parents/guardian's food addictiveness on the development of their own food addiction. This study examined this overlooked relationship and how empathy influences the said connection through a digital survey consisting of a modified 10-item Yale Food Addiction Scale and a modified 10-item Empathy Quotient. As empathy is the ability to sense the feelings and emotions of others, it may play a role in how a child perceives their parents. The findings indicate that there is a positive correlation between perceived parental food addiction and the individual's food addiction. Additionally, there is a positive correlation between empathy and the individual's food addiction score and a correlation approaching significance between empathy and perceived parental food addiction. While this notion was true for the whole population, those with a high level of empathy were more vulnerable to perceiving this. Understanding the role of parenting in food addictive behavior can revolutionize the habits of parents as this study revealed its detrimental effects.

Addiction is a prevalent issue in American families. In fact, roughly 25% of children in America reside in homes where substance and drug abuse occur (Editorial Staff, 2022). Due to the poor parenting accompanied with addiction, children of addicts are more likely to perform poorly in school, suffer from depression and anxiety, and become addicted to narcotics and alcohol. When a parent is abusing a substance, they switch roles with their children. These children now take on the responsibility of a caregiver.

Food addiction consists of pleasurable eating practices that involve the overconsumption of foods that contain excessive amounts of sugar, salt, and fat (Zhao et al., 2018). This psychological illness is frequently accompanied with deplorable cravings and a lack of self-control in relation to pleasure-inducing foods (Fletcher & Kenny, 2018). When junk food is consumed, the reward system stimulates the brain with a sense of pleasure in the same manner as addictive narcotics. Chemicals such as dopamine are released as feel-good chemicals, which the brain classifies as pleasure (Zhao et al., 2018). Feelings of pleasure often follow the consumption of diets that are high in refined foods and sugars. When comparing diets across the world, there are higher amounts of refined foods and sugars in "Western" diets (Selhub, 2020). Therefore, it is not surprising that food addiction is such a prevalent issue in America where approximately 70 million people suffer from this disorder (Candelaria, 2016). In addition to being linked with obesity in

general, food addiction and diets that are high in granulated sugar have been connected to cognitive impairments and have aggravated symptoms of mood disorders such as depression, loneliness, anxiety, and low self-esteem (Jacques et al., 2019; Selhub, 2020; Zhao et al., 2018).

Overeating is a common practice among empathetic individuals. To cope with the feelings of others, food is overconsumed by highly empathetic people to suppress feelings of stress (Orloff, 2017). However, this quality has yet to be explored in the body of knowledge regarding addiction to food. Similar to highly empathetic people, the way children view the actions of their parents influences their own habits and behaviors (Sherman & Smith, 2019). Since it is known that food addiction is a prevalent issue in the United States as well as that perception influences behavior, it is imperative to study how perception, whether based on parents or on empathy, affects the eating habits of children.

Review of Literature

Previous studies have shown that food addiction contributes to the severity of obesity and physique measurements from normal weight to severely overweight individuals. This occurs more in women than in men (Pedram et al., 2013). In general, women are more likely to suffer from eating disorders than men are (Striegel-Moore et al., 2009). Additionally, 80-89% of food-addicted individuals in a study

were considered overweight or obese based on their Body Mass Index (BMI) (Pedram et al., 2013). This shows a correlation between the eating disorder and obesity. An additional strong correlation was also found between victims of child abuse and food addiction. This was in part due to victims responding to stress by utilizing food (Mason et al., 2013). Coping with emotions through eating is not limited to abuse victims. Overeating is common among highly empathetic people who cope with the problems of others by consuming an excessive number of sugars, carbs, or unhealthy food (Orloff, 2017). In addition to the emotions of others, the actions of parents are also influential in shaping the behavior of children. Modeling is a crucial aspect of parenting. In fact, parenting is 80% modeling (Clark, 2020), which means that the actions of parents may be more impactful than any other parenting tactics. The influence of parents on the dietary habits of children is even visible among adolescents who desire an increase in independence and cultivate their eating practices during independent eating junctures (Dimitratos et al., 2022). The heavy involvement of a parent in their child's life can influence the dietary behaviors they develop (Sherman & Smith, 2019). However, it is unclear how children mirroring the implicit habits of their parents differs from eating what is purchased in the home. Parental qualities that affect said behaviors are family meals, parent dieting or irregular eating practices, and the stress of parents. Parental stress can stem from divorce, psychological illness, and parent-child conflict (Dimitratos et al., 2022). The genes of and the environment curated by the parents play a meaningful role in the eating habits of children. The living situations established by parents have featured the purchasing of inexpensive and energy dense foods that are unhealthy and often promote overeating and weight gain thus negatively affecting the growth and health of children (Savage et al., 2007).

Hypotheses

Hypothesis A: A relationship will present between the individual's food addiction score and perceived parental food addiction score.

Hypothesis B: Empathy will be positively correlated with both the individual's food addiction score and the perceived parental food addiction score. Additionally, highly empathetic individuals will be even more inclined to recognize food addiction in a parent and suffer from this condition.

Method

Participants

The sample of this study consisted of a total of 78 participants. The participants were recruited through Amazon Mechanical Turk. Originally there were 109 participants, however, 31 were eliminated if there was any indication that the participant's responses were not authentic, such as completing the survey within less than a minute. 31 of the participants were male and 47 of the participants were female. 90% of the participants were Caucasian, 7% were African

American/Black, 1% were Hispanic/Latinx, and 1% were Native American. All the participants were at least 18 years old.

Materials

The eating habits of the participants and their perception of their parent's eating habits were assessed through a modified 10-item Yale Food Addiction Scale (Brunault et al., 2020). This 5-point Likert scale was used by participants to rank the frequency of the prompts asked ranging from 0 = never to 4 = 4 or more times or daily. Additionally, a modified 10-item Empathy Quotient was also taken by the participants (Lawrence et al., 2004). This 4-point Likert scale assessed the participants' agreeability to the statements regarding their character and empathetic nature on a scale ranging from 1 = strongly disagree to 4 = strongly agree. These scales were included in a Microsoft Form Survey that was distributed on Amazon Mechanical Turk. Prior to responding to the aforementioned scales, participants answered demographic questions that identified their gender, age, weight, height, ethnicity, and household income. Questions pertaining to the participants' relationships with their parents were also asked.

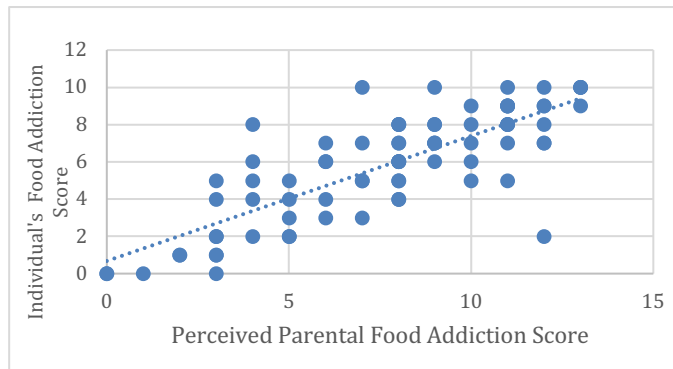
Procedure

Once the needed scales were acquired, modified, and included in the survey, the questionnaire was distributed on Amazon Mechanical Turk. Participants responded to the questionnaire and the responses to each scale were scored. Then, high and low empathy groups were created based on the empathy quotient score material. Finally, the data was analyzed through JASP, a statistical analysis program, where Spearman's rank correlations and independent samples *t*-tests were conducted.

Results

In order to address the first hypothesis of this research, which was to determine a relationship between the individual's food addiction score and perceived parental food addiction score, a Spearman's rank correlation was conducted. The results showed a strong positive correlation between the two variables, $r(78) = .77, p < .001$. Figure 1 indicates that as perceived parental food addiction score increased, the individual's food addiction score increased as well. This shows that the mere perception of food addiction in a parent is related to a child's development of a food addiction.

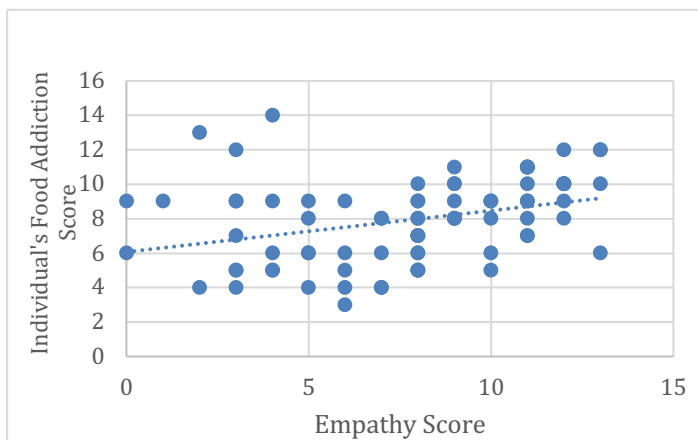
Figure 1. Individual's Food Addiction Score Vs. Perceived Parental Food Addiction Score



Note. A Spearman's rank correlation was conducted to evaluate the relationship between the individual's food addiction score and the perceived parental food addiction score.

The next hypothesis was to determine if empathy was a contributing factor to this relationship. A Spearman's rank correlation was computed to assess the relationship between empathy and individual food addiction. There was a moderately positive correlation between the individual's food addiction score and empathy, $r(78) = .42, p < .001$. The results displayed in Figure 2 show that as empathy increased, the individual's food addiction score also increased, to a moderate extent.

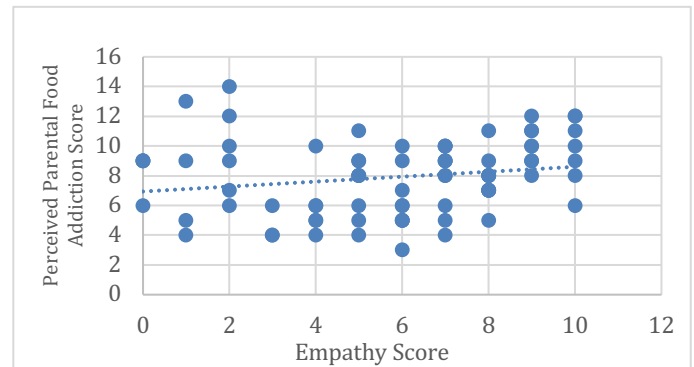
Figure 2. Individual's Food Addiction Score Vs. Empathy Score



Note. A Spearman's rank correlation was conducted to evaluate the relationship between empathy and the individual's food addiction score.

Subsequently, a Spearman's rank correlation was computed to assess the relationship between empathy and the perceived parental food addiction score. There was a weak, positive correlation between the two variables, $r(78) = .27, p = .016$. Figure 3 shows that as empathy score increased, perceived parental food addiction increased as well, to a weak extent. This finding can suggest that empathy might be associated with children better recognizing food addiction in parents.

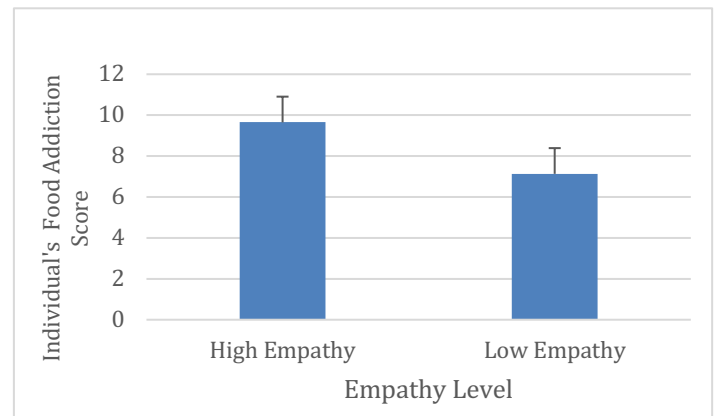
Figure 3. Perceived Parental Food Addiction Score Vs. Empathy Score



Note. A Spearman's rank correlation was conducted to evaluate the relationship between empathy and perceived parental food addiction.

To further explore the potential relationship between empathy and food addiction, an Independent Samples *t*-test was conducted to compare the difference in the individual's food addiction score between individuals with a high level of empathy and those with a low level of empathy. There was a significant difference in the individual food addiction scores among high empathy participants ($M = 9.6, SD = 3.5$) and low empathy participants ($M = 7.1, SD = 3.2$); $t(78) = 2.81, p = .006$. These results suggest that an individual's food addiction score can be predicted by empathy level. As shown in Figure 4, the food addiction score for children with high empathy is significantly higher than the food addiction score for children with low empathy group.

Figure 4. Individual's Food Addiction Score Vs. Empathy Level

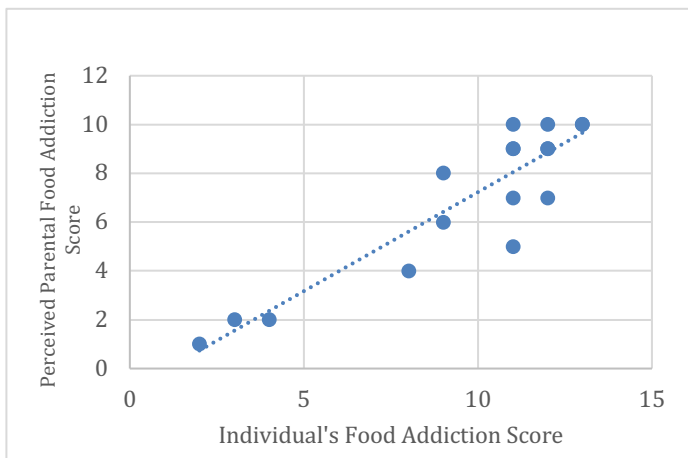


Note. An Independent Samples *t*-test was conducted to determine if there was a significant difference in individuals' food addiction scores between high and low empathy groups.

To further understand empathy's role in food addiction, a Spearman's rank correlation was computed to assess the relationship between individuals' food addiction scores and perceived parental food addiction scores among high empathy participants. There was a strong, positive correlation between the two variables, $r(17) = .823, p < .001$. Based on Figure 5, this means that for participants with high levels of empathy,

perceived parental food addiction score increases as individual food addiction score increases.

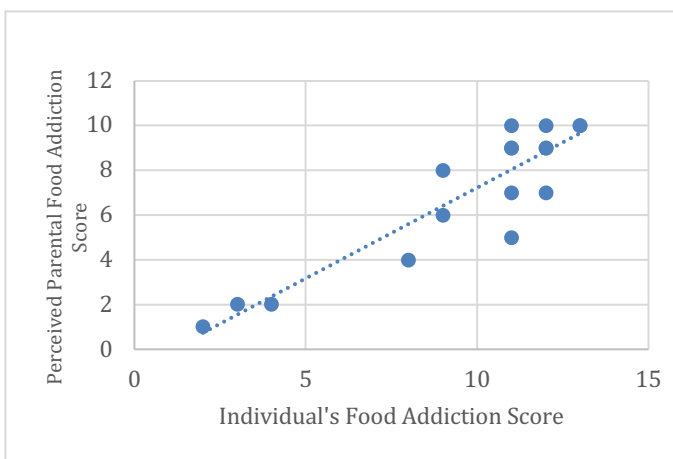
Figure 5. Perceived Parental Food Addiction Score Vs. Individual's Food Addiction Score in High Empathy Individuals



Note. A Spearman's rank correlation test was conducted to evaluate the relationship between an individual's food addiction score and perceived parental food addiction score among high empathy participants.

Then, another Spearman's rank correlation was computed to assess the relationship between individuals' food addiction scores and perceived parental food addiction scores among low empathy participants. Once again, there was a strong, positive correlation between the two variables $r(61) = .75, p < .001$. Figure 6 shows that as the individual's food addiction score increases, their perceived parental food addiction score also increases.

Figure 6. Perceived Parental Food Addiction Score Vs. Individual's Food Addiction Score in Low Empathy Individuals



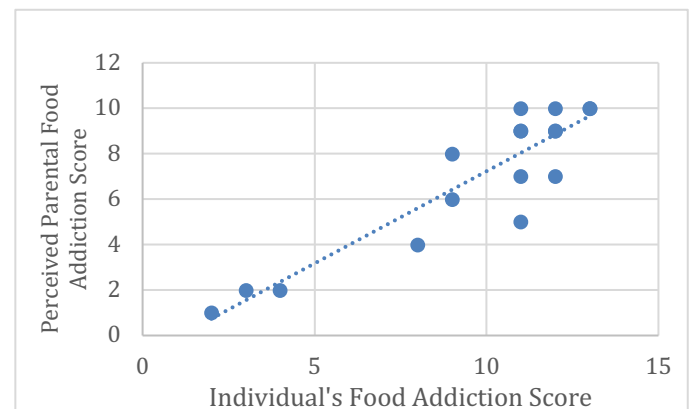
Note. A Spearman's rank correlation test was conducted to evaluate the relationship between individuals' food addiction scores and perceived parental food addiction scores among low empathy participants.

Based on the r -values associated with Figures 5 and 6, there is a stronger association between the individual's food addiction score and perceived parental food addiction score for high empathy participants. This means that the individual

food addiction score of children with low empathy is not affected as much by perceived parental food addiction in comparison to children with a high level of empathy.

In order to see how empathy might affect the relationship between individual food addiction and perceived parental food addiction, a ratio was taken between the two numerical values and then compared using an independent samples t -test. There was no significant difference in the ratios for high empathy participants ($M = 0.7, SD = 0.1$) and the ratios for low empathy participants ($M = 0.8, SD = 0.4$); $t(76) = -1.13, p = .263$. Despite the lack of significance, these tests help to show for the first time that high empathy individuals could be more vulnerable to food addiction, especially with parental modeling of food addiction.

Figure 7. Ratios Vs. Empathy Level



Note. An Independent Samples t -test was conducted to compare the ratios of individual vs. perceived parental food addiction values between high and low empathy groups.

Discussion

This study took an alternate approach to understanding the role of parents and diet by examining food addiction. For the first time, perception of food addiction was compared to one's personal level of food addiction. Additionally, the role of empathy was evaluated. This study was able to highlight the importance of parental modeling when it comes to the relationship their children form with food. While previous studies have shown that if parents overconsume food, children are more likely to overeat, this has never been studied through the lens of actual food addiction, a diagnosed dependency on food. For the first time, it was shown that the simple perception of food addiction in a parent is related to a child's development of food addiction themselves. This finding agrees with previous research, as it shows the depth of the influence that parents have on their children (Savage et al., 2007). This contributes to the body of knowledge that underscores the importance of parental modeling in terms of the relationship children develop with food (Clark, 2020). While the relationship between perceived parental food addiction and individual food addiction was true for the whole sample, those with a high level of empathy were more vulnerable to perceiving this.

While previous studies have revealed how parental overeating and high levels of stress can lead to a child overeating, this relationship has never been explored specifically as it relates to addictive behavior and empathy (Dimitratos et al., 2022). The discrepancy between the participants with low empathy and high empathy in terms of addiction to food and perception of it, although not significant, emphasizes empathy's ability to enable food addiction. This novel research indicates that empathetic children could be more vulnerable to developing a food addiction and perceiving it in a parent.

Overall, the findings agree with and build upon previous studies as they emphasize that parents play an imperative role in the eating practices developed by children (Dimitratos et al., 2022). Specifically, the way children perceive the dietary behaviors of their parents affects their risk of developing food addiction themselves. Additionally, how in tune a child is to the feelings and emotions of others may increase that risk of food addiction development and perception in parents.

Conclusion

It is important to note that there were limitations to this study. Only 78 participants partook in this study and did not equally represent different ethnic backgrounds. Future studies should look at a variety of ethnic backgrounds as research has shown that different cultures can foster different dynamics in the parent/child relationship (Bornstein, 2013). In addition, perceived parental food addiction was looked at holistically. Future studies could examine differences in how perceived maternal vs. paternal food addiction might differentially impact a child's eating habits.

This research was able to highlight the importance of parental modeling when it comes to the relationship that children form with food. While previous studies have revealed how parental overeating and high levels of emotion can lead to a child overeating, this relationship has never been explored as it relates to addictive behavior and empathy. This study showed that if a child merely believes their parent is addicted to food, they are more likely to develop this condition too. Furthermore, empathetic children are more vulnerable to food addiction and are more likely to be impacted by a parent's addictive food behavior. This type of research is crucial in advancing understanding of addiction, as it relates to food, and developing strategies to help individuals address this problem. Since food addiction is a known contributing factor to obesity, and obesity is associated with a massive number of health issues, it is crucial that we better understand the underlying factors contributing to this problem.

References

- Bornstein M. H. (2013). Parenting and child mental health: A cross-cultural perspective. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, 12(3), 258 – 265. <https://doi.org/10.1002/wps.20071>
- Brunault, P., Berthoz, S., Gearhardt, A. N., Gierski, F., Kaladjian, A., Bertin, E., Tchernof, A., Biertho, L., de Luca, A., Hankard, R., Courtois, R., Ballon, N., Benzerouk, F., & Bégin, C. (2020). The modified Yale Food Addiction Scale 2.0: Validation among non-clinical and clinical French-speaking samples and comparison with the full Yale Food Addiction Scale 2.0. *Frontiers in Psychiatry*, 11. <https://doi.org/10.3389/fpsy.2020.480671>
- Candelaria, M. (2016, September 2). *Food addiction numbers rising*. Orlando Sentinel. <https://www.orlandosentinel.com/health/os-food-addiction-numbers-rising-20160902-story.html>
- Clark, A. (2022, August 10). *80% of parenting is modelling*. The Parent Practice. <https://www.theparentpractice.com/blog/80-of-parenting-is-modelling>
- Dimitratos, S. M., Swartz, J. R., & Laugero, K. D. (2022). Pathways of parental influence on adolescent diet and obesity: A psychological stress—focused perspective. *Nutrition Reviews*, 80(7), 1800 – 1810. <https://doi.org/10.1093/nutrit/nuac004>
- Editorial Staff. (2022, September 9). *Children of addicted parents guide: How to deal with addict parents*. American Addiction Centers. <https://americanaddictioncenters.org/rehab-guide/guide-for-children>
- Fletcher, P. C., & Kenny, P. J. (2018). Food addiction: a valid concept? *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 43(13), 2506 – 2513. <https://doi.org/10.1038/s41386-0180203-9>
- Jacques, A., Chaaya, N., Beecher, K., Ali, S. A., Belmer, A., & Bartlett, S. (2019). The impact of sugar consumption on stress driven, emotional and addictive behaviors. *Neuroscience & Biobehavioral Reviews*, 103, 178 – 199. <https://doi.org/10.1016/j.neubiorev.2019.05.021>
- Lawrence, E. J., Shaw, P., Baker, D., Baron-Cohen, S., & David, A. S. (2004). Measuring empathy: Reliability and validity of the Empathy Quotient. *Psychological Medicine*, 34(5), 911 – 919. <https://doi.org/10.1017/s0033291703001624>
- Mason, S. M., Flint, A. J., Field, A. E., Austin, S. B., & Rich-Edwards, J. W. (2013). Abuse victimization in childhood or adolescence and risk of food addiction in adult women. *Obesity (Silver Spring, Md.)*, 21(12), 775 – 781. <https://doi.org/10.1002/oby.20500>

- Orloff, J. (2020). *The Empath's Survival Guide: Life Strategies for Sensitive People*. Sounds True.
- Pedram, P., Wadden, D., Amini, P., Gulliver, W., Randell, E., Cahill, F., Vasdev, S., Goodridge, A., Carter, J. C., Zhai, G., Ji, Y., & Sun, G. (2013). Food addiction: Its prevalence and significant association with obesity in the general population. *PLoS One*, 8(9). <https://doi.org/10.1371/journal.pone.0074832>
- Savage, J. S., Fisher, J. O., & Birch, L. L. (2007). Parental influence on eating behaviour: Conception to adolescence. *The Journal of Law, Medicine & Ethics*, 35(1), 22 – 34. <https://doi.org/10.1111/j.1748-720X.2007.00111.x>
- Selhub, E. (2022, September 18). *Nutritional psychiatry: Your brain on food*. Harvard Health. <https://www.health.harvard.edu/blog/nutritional-psychiatry-your-brain-on-food-201511168626>
- Sherman, L. D., & Smith, M. L. (2019). African American fathers' perceived role for the dietary behaviors of their children: A qualitative study. *American Journal of Men's Health*, 13(2). <https://doi.org/10.1177/1557988319840851>
- Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., & Kraemer, H. C. (2009). Gender difference in the prevalence of eating disorder symptoms. *The International Journal of Eating Disorders*, 42(5), 471 – 474. <https://doi.org/10.1002/eat.20625>
- Zhao, Z., Ma, Y., Han, Y., Liu, Y., Yang, K., Zhen, S., & Wen, D. (2018). Psychosocial correlates of food addiction and its association with quality of life in a non-clinical adolescent sample. *Nutrients*, 10(7). <https://doi.org/10.3390/nu10070837>