Abstract

Debates regarding addictive-like eating have generated several conceptualizations of this construct. Qualitative research helps ensure that conceptualizations capture how individuals may experience addictive-like eating. In this study, we conducted semi-structured interviews with ten participants who identified themselves as addicted to food, or to food and eating, to determine how they conceptualized their addictive-like eating. Using thematic analysis, we identified four themes: (1) Social Environment, describing how past and present social environments affected addictive-like eating; (2) Situational Cues, encompassing situational contributions to addictive-like eating; (3) Persistent Cognitions, including preoccupation with food and loss of control; and (4) Impact of Weight, encompassing weight gain and its perceived impact on health, body image, and distress. Participants described properties specific to their preferred foods, as well as environmental and cognitive factors contributing to addictive-like eating. These descriptions were not completely captured by either substance-based "food addiction" or behavioural "eating addiction" frameworks, though characteristics of both were present. Further, existing scales of addictive-like eating do not assess the impact of social and situational cues, suggesting a need for new or revised measures. We propose a working definition of addictive-like eating that incorporates the characteristics described.

Keywords: Food addiction; Qualitative; Eating behaviour; Overeating; Binge eating

Conceptualizing addictive-like eating: A qualitative analysis

Carley Paterson[1], Emilie Lacroix[1] & Kristin M. von Ranson[1] *

[1] Department of Psychology, University of Calgary, 2500 University Dr. NW, Calgary, AB, Canada T2N 1N4

* Corresponding author

E-mail addresses: cepaters@ucalgary.ca (C. Paterson), emilie.lacroix@ucalgary.ca (E. Lacroix), kvonrans@ucalgary.ca (K.M. von Ranson)

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conceptualizing addictive-like eating: A qualitative analysis

The theory that some people may develop an addiction to food has been hotly debated in recent years (Lacroix, Tavares, & von Ranson, 2018). There is no consensus on a term and definition to describe addictive-like eating[1] patterns (Hebebrand et al., 2014; Ziaudeen & Fletcher, 2013; Long, Blundell, & Finlayson, 2015), although these patterns have been associated with depression, negative affect, emotional dysregulation, lower self-esteem, negative body image (Gearhardt et al., 2012), and obesity (Davis & Carter, 2009). At least five perspectives on the nature of addictive-like eating have been presented in the literature (Lacroix et al., 2018), described below.

First, the food addiction hypothesis posits that certain foods, especially highly-processed foods high in sugar, salt, and/or fat, trigger physiological processes and symptoms similar to those caused by drug addiction (Gearhardt, Corbin, & Brownell, 2009; Gearhardt, Davis, Kuschner, & Brownell, 2011). These symptoms include cravings, tolerance and withdrawal symptoms, and associated distress and/or impairment. A self-report measure, the Yale Food Addiction Scale (YFAS), was developed by Gearhardt et al. (2009) to assess addictive-like eating based on the seven DSM-IV diagnostic criteria for substance dependence (American Psychiatric Association [APA], 2000), and a revision was released to align with DSM-5 substance use disorder criteria (YFAS 2.0; Gearhardt, Corbin, & Brownell, 2016). Although the YFAS has been used in almost all research on "food addiction" (Meule, 2015), there is disagreement regarding whether a substance use disorder framework is the most appropriate way

[1] We employ the term “addictive-like eating” throughout this paper to describe the construct commonly associated with terms such as "food addiction" or "eating addiction." We chose this neutral, descriptive term to avoid aligning with existing hypotheses regarding the nature of this construct.

to conceptualize addictive-like eating (e.g., Hebebrand et al., 2014; Ziaudeen & Fletcher, 2013; Long et al., 2015).

Second, the eating addiction hypothesis conceptualizes addictive-like eating as a behavioural addiction, similar to gambling disorder, the only behavioural addiction included in DSM-5 (APA, 2013). According to Potenza (2008), a behavioural addiction consists of a behaviour that is highly rewarding, reinforcing, and capable of altering the reward system in a similar manner as drugs of abuse. The ingestion of a substance is essential to produce the addictive symptoms of a substance use disorder, whereas substance ingestion is not necessary in behavioural addictions. Proponents of the food addiction hypothesis emphasize the importance of food characteristics in provoking addictive-like symptoms (Schulte, Potenza, & Gearhardt, 2017), whereas proponents of the eating addiction hypothesis argue that differential addictive potential of "addictive" foods is attributable to cognitive and behavioural factors, rather than food substances themselves (Hebebrand et al., 2014).

Third, addictive-like eating has been conceptualized as a subtype of binge eating disorder (BED). Descriptions of addictive-like eating often include the cardinal symptom of BED: episodes of binge eating, or eating unusually large amounts of food with concomitant loss of control, as well as significant distress (Davis, 2013). Researchers have found substantial yet incomplete overlap in symptoms and prevalence between addictive-like eating and BED (Cassin & von Ranson, 2007; Davis et al., 2011; Gearhardt et al., 2012; Imperatori et al., 2016). For example, among 72 obese adults who met YFAS criteria for food addiction, Davis and colleagues (2011) found that only 50% met BED criteria. Individuals with addictive-like eating who do not meet BED criteria may still experience elevated rates of eating pathology with associated distress, weight cycling, impulsivity, depression, and anxiety (Gearhardt, Boswell, &

White, 2014; Ivezaj, White, & Grilo, 2016). The fact that not all individuals with addictive-like eating meet BED criteria makes it difficult to conceptualize addictive-like eating solely as a subtype of BED, as it overlooks approximately 50% of those with addictive-like eating. Also inconsistent with this perspective are the elevated rates of addictive-like eating found among individuals with other recognized eating disorders, such as anorexia nervosa and bulimia nervosa (Imperatori et al., 2016).

Fourth, Davis (2013) and Vainik, Neseliler, Konstabel, Fellows, and Dagher (2015) have posited that both addictive-like eating and BED may represent points on a transdiagnostic spectrum of overeating or uncontrolled eating. This spectrum ranges in severity from mild, occasional hedonic overeating, to frequent overeating, binge episodes, BED, and, at the most severe end of the spectrum, "food addiction" (Davis, 2013; Vainik et al., 2015). The Reward-based Eating Drive scale (RED-13) was developed by Mason et al. (2017) to measure severity of addictive-like eating across this spectrum, an operationalization which sidesteps the problem of comorbidity and incomplete diagnostic overlap.

Fifth, the construct of addictive-like eating may represent the pathologizing of normative hedonic overeating and therefore hold no clinical utility (Finlayson, 2017). Reward pathway activation in the brain in response to food cues is often greater in individuals with higher YFAS scores (Gearhardt et al., 2011). However, Finlayson (2017) has argued the activation of reward pathways occurs in response to foods with high energy density because of an evolved preference for these foods due to enhanced survival value in food-scarce environments. Thus the activation of these pathways is a normal brain response and does not denote pathology. In fact, because reward pathways are activated by many adaptive behaviours, Finalyson (2017) has argued that this activation is insufficient to either confirm or refute the food addiction hypothesis.

The topic of addictive-like eating has generated much research (Meule, 2015). However, findings and interpretations of these findings have often conflicted (Lacroix et al., 2018), highlighting the lack of (and need for) a universal understanding and definition of addictive-like eating. Quantitative and neuroscience research undoubtedly improve our understanding of addictive-like eating, but do not capture individuals' experiences of these eating patterns. For example, if questionnaires have been designed based on questionable or invalid a priori assumptions about addictive-like eating, resulting prevalence estimates may be of limited value. Qualitative research is essential to move toward a valid and clinically meaningful definition of addictive-like eating.

Qualitative studies to date have identified many important themes, such as a loss of control over food intake (van Ostrand, 2015; Ruddock, Dickson, Field, and Hardman, 2015), frequent food cravings (Ruddock et al., 2015; Malika, Hayman, Miller, Lee, and Lumeng, 2015), eating for psychological rather than physiological reasons, increased weight, and problems with specific foods (Ruddock et al., 2015). Symptoms of tolerance and withdrawal, however, were less commonly described, possibly due to participants misunderstanding these terms. Cullen et al. (2017) found that, although most participants accepted the "food addict" label and many said they were more likely to seek treatment if their eating problems were labelled as an addiction, some rejected it, reasoning that this label could lead to adverse consequences such as internalizing "addict" stereotypes.

These qualitative studies have helped characterize individual experiences of addictive-like eating and identify key features, such as loss of control. However, to our knowledge, no qualitative study has yet been conducted with the goal of investigating competing conceptualizations of addictive-like eating, such as the substance-based "food addiction" and

behavioural "eating addiction" hypotheses. Furthermore, through their recruitment procedures, some studies may inadvertently have ensured that the results aligned with specific conceptualizations of addictive-like eating, or only characterize certain subtypes of addictive-like eating. For example, Van Ostrand (2015) recruited participants from a 12-step support group, Food Addicts in Recovery Anonymous, and excluded participants who did not have YFAS-defined food addiction, thus making it likely that participants' conceptualizations would be consistent with the food addiction hypothesis. Similarly, Ruddock et al. (2015) studied self-perceived "food addicts," rather than recruiting people who identified as addicted to eating. Cullen et al. (2017) provided participants with a definition of food addiction, implicitly supporting a substance-based food addiction perspective. Furthermore, many qualitative studies have primarily studied women (e.g., Malika et al., 2015; Van Ostrand, 2015) or individuals with obesity and overweight (e.g., Cullen et al., 2017). Considering that addictive-like eating is not specific to these populations (Imperatori et al., 2016), qualitative research with men as well as individuals with lower body mass indices (BMIs; kg/m^2) is necessary to examine a wider range of experiences with addictive-like eating.

The present study investigated experiences of addictive-like eating among both women and men with diverse BMIs who felt addicted to specific foods, eating behaviours, or both. Importantly, we explored two dominant hypotheses of addictive-like eating. We had two primary research questions: (1) How do individuals who feel addicted to food or eating conceptualize and describe their addictive-like eating? (2) Are descriptions of addictive-like eating consistent with a substance use disorder, a behavioural addiction, both conceptualizations, or neither?

Method

Participants

Participants were recruited from the following two sources.

Undergraduate Research Participation System (RPS). Psychology students were provided with course credit for participating in this study through the RPS pool of a Canadian university. Student RPS users completed a pre-screen measure at the beginning of the semester to assess eligibility. Participants who reported that they felt addicted to food, eating, or both were eligible and invited to participate. There were no exclusion criteria. We included participants based on their own identification with food and/or eating addiction rather than based on a YFAS diagnostic cut-off because we wanted to avoid conflating addictive-like eating with either measure, and felt it was important to include people who may experience sub-threshold symptoms. We believed that using self-identification with food and/or eating addiction alone would allow us to better investigate what addictive-like eating is *and* what it is not.

Community sample. To reach a wider variety of individuals, participants were recruited from a free online classified advertising service, *kijiji.ca*. An ad was posted seeking individuals who felt addicted to food or eating. We also advertised the study identically on our research lab website. Community participants were entered into a lottery to win a $50 gift card.

Pre-screen Measures

Potential participants completed demographic information including their age, weight and height, gender, ethnicity, income, and employment status. Participants also completed the following questions and questionnaires to assess eligibility and to describe the sample.

The following four questions were administered to assess self-perceived experiences with food and/or eating addiction: 1. How often do you overeat? a) More than once a week, b) Once a week, c) Once a month, d) Less than once a month, e) I never overeat; 2. Have you ever felt addicted to food or eating? a) Yes, to one or more particular foods (or types of foods), b) Yes, to

eating (it doesn't matter much what food in particular), c) Yes, to both food and eating, d) No; 3. If yes, have you felt addicted to food or eating within the past 12 months? a) Yes, to food, b) Yes, to eating, c) Yes, to both food and eating, d) No; 4. If you have ever felt addicted to food, please list which foods or types of foods (If not applicable, leave empty).

Yale Food Addiction Scale 2.0. Food addiction symptoms were assessed using the YFAS 2.0 (Gearhardt, et al., 2016). This scale includes 35 items on the frequency of food-related symptoms. Questions focus on the past 12 months and are rated on an eight-point scale ranging from "Never" to "Every day." Each question corresponds to a DSM 5 Substance-Related and Addictive Disorders (SRAD) symptom criterion (e.g., tolerance, craving, withdrawal) or clinical impairment/distress; a symptom is scored as present when participants positively endorse at least one of the questions that maps onto it. The symptoms are then totalled to yield a "diagnosis" of mild (2-3 symptoms + impairment and/or distress), moderate (4-5 symptoms + impairment and/or distress), or severe (6 or more symptoms + impairment and/or distress) food addiction, as well as a continuous symptom count ranging from 0 to 11. The possible range of scores is listed in Table 1. The YFAS 2.0 has demonstrated evidence of internal consistency, and convergent, discriminant, and incremental validity (Schulte & Gearhardt, 2017; Carr, Catak, Pejsa-Reitz, Saules, & Gearhardt, 2017).

Eating Disorder Examination – Questionnaire (EDE-Q). Eating disorder psychopathology was assessed using the EDE-Q 6.0 (Fairburn & Beglin, 2008). This 33-item self-report measure focuses on the previous 28 days and invites responses using seven response options regarding degree of agreement or frequency of certain symptoms. Items assess dietary restraint, eating, weight and shape concern, as well as frequency of behaviours such as binge eating, compensatory behaviours, and compulsive exercise. The scale has four subscales

(Restraint, Eating Concern, Shape Concern, and Weight Concern), and a total score based on the average of the subscales. Higher scores indicate greater eating disorder psychopathology. The possible range of scores is listed in Table 1. The EDE-Q has demonstrated evidence of good internal consistency (Luce & Crowther, 1999) and construct validity (Mond, Hay, Rodgers, Owen, & Beumont, 2004).

Table 1

Descriptive Statistics for Pre-Screen Measures (N=10)

	Mean	Minimum	Maximum	SD	Possible score range
YFAS Symptom Count	6.90	3.00	10.00	2.78	0 -11
EDE-Q					
Global Score	2.94	0.23	5.25	1.58	0-6
Restraint	2.40	0.00	5.20	1.98	0-6
Eating Concern	2.38	0.40	4.80	1.39	0-6
Shape Concern	3.92	0.50	6.00	2.06	0-6
Weight Concern	3.04	0.00	5.20	2.00	0-6

Note. SD = Standard deviation. YFAS = Yale Food Addiction Scale 2.0 (Gearhardt et al., 2016); EDE-Q = Eating Disorder Examination Questionnaire 6.0 (Fairburn & Beglin, 2008).

Procedure

Ethics approval was obtained from the University of Calgary Conjoint Research Ethics Board. All individuals who expressed interest in the study completed above questionnaires online after completing informed consent, and if eligible, were subsequently interviewed using a semi-structured interview guide. The interview guide included standardized questions to initiate

discussion, which are listed in Table 2. Follow-up questions varied depending on the content of the interview. Interviews were audio-recorded and transcribed for data analysis.

Table 2

Interview Guide.

Topic of Discussion	Sample questions*
1. Description of personal experience	• "You said that you feel addicted to [food and/or eating] - tell me more." • "Do you think that you are addicted to (specific foods/types of foods), or do you think it is the *behaviour* of eating that is addicting?" • "How would you know if you were *not* addicted to [food/eating/both]?"
2. Definitions	• "How would you define [food addiction/eating addiction]?" • "Many people experience cravings for certain foods. What do you think is the difference between normal cravings and [food/eating addiction]?" • "What is it that makes you think you are addicted to [food/eating/both]?"
3. Impairment	• "Has your experience with [food/eating addiction] interfered with your daily life? How so? (emotionally, socially, occupationally)"
4. Coping	• "How have you been coping with [issues surrounding food/eating addiction]?" • "Do you have suggestions for other people who are coping with similar issues with food or eating?"

* The complete guide may be requested from the authors.

Thematic analysis is a form of qualitative data analysis in which the researcher sorts each statement made by the participants into categories until clear patterns of meaning begin to form (Braun & Clarke, 2006). In accordance with Braun and Clarke's (2006) guidelines, our thematic analysis consisted of three stages, which were revisited recursively. In the first stage, the first author transcribed each interview, then read the transcripts. This stage allowed the researcher to notice initial ideas and concepts (Braun & Clarke, 2006). The second and third stages consisted

of coding and theme development. The software NVivo Version 11 (QSR International) was used as an organizational tool to code the data. A short phrase, called a code, was selected to summarize each comment made by each participant. These codes became categories for related ideas, and related categories were grouped into distinct experiences and ideas, called themes.

Results

Demographics and Pre-Screen Considerations

Eight interviews were conducted in person, and two were conducted by phone. Interview duration ranged from 15 to 52 minutes, with a mean duration of approximately 45 minutes. The 15-minute interview was an outlier and was retained despite its short length due to many valuable experiences described concisely by the participant. Two men and two women were recruited from the university RPS, two men and two women were recruited from *Kijiji.ca*, and two women were recruited from the laboratory website. Data collection concluded after the tenth participant, when the data were deemed to have reached theoretical saturation, the point at which the data becomes 'saturated' with valuable answers and patterns start to repeat themselves (Guest, Bunce & Johnson, 2006).

Participants' ages ranged from 18 to 58 years (M = 28.6 years, SD = 14.7) and their mean BMI was 23.7 kg/m^2 (range = 17.4 to 33.4 kg/m^2), calculated from self-reported height and weight. According to BMI weight classes (World Health Organization, 2019), one participant was underweight, six participants were in the normal weight range, one participants was overweight, and two participants were obese. Eight participants identified their ethnicity as Caucasian, one as Filipino, and one as Hispanic. Seven participants indicated their marital status was single, two as married, and one as a common law relationship. Half of participants were students employed part-time or full-time; in addition, one was employed full-time, two were

unemployed, one was unemployed and looking for work, and one was unemployed and receiving disability compensation. One participant did not disclose their income; the median household income of the remaining participants was $150,000 (range = $30,000 - $400,000).

Descriptive statistics for pre-screen measure scores are displayed in Table 1, and each participant's score summary, along with their pseudonym, is presented in Table 3. Five individuals reported that they felt addicted to food but not eating, and five individuals reported that they felt addicted to both food and eating. Participants who felt addicted to food but not eating identified specific foods that drove their addiction, which included potato chips, candy, and calorie-dense foods such as meat and cheese. Individuals who reported feeling addicted to both food and eating indicated preferences for the same types of foods, but placed less importance on the specific foods, instead describing an urge to eat *any* food that was immediately available. Some participants reported experiencing episodes of binge eating in which they would eat a large quantities of food in one sitting, whereas others described addictive-like eating in which they would graze on preferred foods throughout the day. Sixty percent of the sample received a YFAS diagnosis (see Table 3). Two female participants disclosed spontaneously that they had been diagnosed with eating disorders in the past. One of these participants reported being in recovery from anorexia nervosa, and had recently been experiencing recurrent episodes of binge eating. The other participant stated she had previously been hospitalized for severe anorexia nervosa, and at the time of her interview, reported she was experiencing bulimia nervosa.

Table 3
Participant pseudonyms, demographics, and pre-screen scores

Participant	Age	BMI (kg/m^2)	YFAS score	EDE-Q Total score
John	22	24.4	7 (severe)	3.43
Ben	27	25.9	5 (no YFAS diagnosis)	2.03
Adam	19	22.8	4 (no YFAS diagnosis)	0.23
Jane	21	18.6	9 (severe)	3.71
Emily	20	21.6	10 (severe)	3.74
Sally	58	30.9	10 (severe)	4.65
Anne	53	33.4	7 (no YFAS diagnosis)	3.06
Kelly	30	17.4	10 (severe)	5.25
Mary	18	19.7	4 (moderate)	2.38
Mike	18	22.3	3 (no YFAS diagnosis)	0.89

Definitions

Participants struggled to define addictive-like eating[2]. A student named John, expressed difficulty defining addiction when asked what his life would look like if he were *not* addicted to food: *"Well... what's 'addicted', right?"* Nevertheless, all participants provided some definition of addictive-like eating. The definition provided by Ben was representative of most definitions provided by the participants: *"I would say... [food addiction] is treating food inappropriately, but I guess the real tipping point is where you lose control and it's actually a real health problem, you're actually risking things for it."* Adam explained, *"[Food addiction consists of] uncontrollable urges. I guess fulfilling the habit of going through and eating these certain foods or food every single day."*

Themes

Based on participants' responses, we identified four themes, displayed in Figure 1.

Social Environment. The first theme described participants' perceptions of how past and current social environments affected the development and maintenance of addictive-like eating. This theme, which was touched upon by all participants, contained two sub-themes.

[2] For the sake of consistency with natural language, during interviews we used the term 'food addiction' to describe addictive-like eating.

Current social environment. Despite differences in their social environments, all participants reported their eating attitudes and behaviours were influenced by the people around them. All participants described feeling shame about their eating habits and fear of judgment from others, which often led to social consequences. For John, this shame lead him to conceal his overeating:*"...I'll come home, if I do a bad drive-thru night... all the garbage goes immediately in the garbage... So it's like, 'oh, done, dealt with, no evidence.'"* When asked why, he said: *"I'd rather not have it discussed... they're not really going to persuade me [not to overeat], but... why do they need to know?"* For Jane, overeating was prioritized over socializing, leading to feelings of isolation: *"It makes you feel like it's breeding loneliness almost, like you'd just rather be alone and eat this kind of food than actually go and hang out with people outside to make yourself feel better."*

Past social environment. This sub-theme pertained to participants' perceptions that their social environments during their childhood had impacted their eating behaviours. Six participants mentioned the role of parents' attitudes towards eating and food in the formation of eating habits and, eventually, in the development of addictive-like eating behaviours. Jane said: *"I think [food addiction] is an environmental by-product of your parents' eating habits, or where you grew up and what was acceptable in your household."* Emily described the influence of her family's eating behaviours on her own periods of dieting followed by binges: *"[Dieting] was everywhere... my parents, my aunties and uncles, my grandparents... they all went on [diets]... I think it was very easy to make it look normal."* Jane also described the influence her mother's dysfunctional eating attitudes and behaviours had on the food that was available in her home: *"Junk food is always in the house, because as soon as [my mom] gets off work, that's what she goes to."* In Jane's case, an interaction appeared to exist among social influences on Jane's

eating, the specific foods that contributed to her desire to eat, and the availability of food at home.

Situational Cues. The second theme encompasses situational contributions to the development and maintenance of addictive-like eating behaviour. Specifically, participants described situations that they believed triggered addictive-like eating. For example, Sally mentioned that she was aware of addictive urges in certain contexts, and found herself overeating at home as well when she was doing something sedentary: *"...[It happens] in the evening, watching TV....not doing anything in particular, a sedentary action of some sort. Something where I'm not keeping busy, my hands aren't busy."* Sally would give herself permission to overeat in specific contexts: *"If any vacation is coming up, I think, 'Oh, when I go on that vacation, I'm having this, this, this and this.'"* Anne also described frequent urges to eat specific foods in certain situations, such as when arriving at home. Anne explained: *"Even if I'm not hungry, when I arrive at home, I have to eat. And... when I go to a party, I arrive [home from the party] at eleven or whatever... and most of the time I'm full, because of good food, but I have to eat. I arrive at home, and I have to eat."* Later in the interview, Anne began to share insight into this behaviour: *"... I can control myself outside of my house, but at home, I can't... nobody will judge me... outside, I'm too scared to be judged to overeat."* Anne explained that she associated being at home with feelings of safety and comfort, as it brought back happy memories of being with her grandmother as a child. It appeared that the people in her home environment and the associations she made with the context of her home would trigger specific emotions and feelings, which in turn made her feel more comfortable and appeared to trigger an urge to eat, despite not feeling hungry.

Persistent Cognitions. The third theme includes several aspects of cognition which all participants described as having important influences on the development and maintenance of their addictive-like eating behaviour.

Preoccupation with food. The first sub-theme encompasses persistent thoughts about food, and participants' perceived inability to ignore these thoughts until they acted on the urges and ate the food in question. Sally put it quite simply: *"I think about food all the time,"* whereas Kelly explained how she perceived the difference between typical cravings and thoughts associated with a "real" food addiction: *"I feel like cravings will eventually go away, but that addiction of it, it doesn't go away, it just- almost gets worse, right? The longer you wait, the worse that... craving is."*

Loss of control. All ten participants conceptualized their addictive-like eating as a loss of control, which Anne put concisely: *"I eat without control, I guess."* Emily described it when defining food addiction: *"I think [a food] addiction is distressing, and it's not so much that you feel like eating something, and you're controlling that emotion, it's more like you* have *to eat something."* Furthermore, participants often placed the locus of control on the food rather than on themselves. Anne described this phenomenon as follows: *"The food [controls] me, I don't [control] the food,"* and Jane said something similar when asked what she thought life would be like if she were *not* addicted to food: *"I wouldn't be controlled by certain foods [even] if they were offered in front of me."*

Awareness of consequences. Finally, all participants thought persistently about the consequences of their preoccupation with food. One direct consequence of being preoccupied with food was that their perceived addiction would often interfere with daily responsibilities. Mary, who reported feeling addicted to both food and eating, explained this phenomenon: *"When*

I'm thinking about food, it kind of occupies my mind instead of being able to focus… so I kind of leave studying for a while and go and do that instead, even if I'm not hungry."

Impact of Weight. The fourth theme encompassed actual or anticipated weight gain and its perceived impact on health, body image, and level of distress.

Weight and health. Participants often mentioned the negative short-term and long-term effects of poor eating habits on the body. For example, John explained the immediate negative physical consequences from binge eating: *"You eat that much food, you feel terrible. It's not good food."* All participants described distress because of their awareness of long-term consequences such as possible negative impact on their physical health. Mary said: *"I'm thinking about my long-term health and how [my overeating] would affect me in the future, so that's definitely a huge [source of distress]."* Awareness of the physical consequences of overeating was insufficient to prevent participants from engaging in the behaviour, as John explained: *"It starts out as you enjoy doing it, you know that midway through you're not going to be enjoying it anymore, and you know that after you're not going to enjoy it…but you end up doing it anyway."*

Distress levels. Weight gain was discussed in each interview, and appeared to dictate participants' levels of distress. For example, eight of ten participants perceived weight gain as an ongoing consequence of addictive-like eating, which resulted in high levels of distress. Their discussion of distress centered on weight gain rather than eating behaviours. Jane discussed this idea in the context of a competitive athletic community in which she frequently compared her weight to those around her: *"...Everyone is so thin who I hang out with in that community, and they're always preaching how much they weigh... and you compare yourself all the time to your peers, so... I feel like I could even be a better person if I just stopped [eating the way I do.]"*

Those participants who did not perceive weight gain as an ongoing consequence of their eating habits were less inclined to describe severe distress. This was the case for two male participants. Mike, a student, described his relationship with weight in relation to his eating habits: *"I've never really had a problem with weight. So I kind of just have gone through my whole life and really been able to eat whatever I want, or how much I want."* Earlier on, he explained that he is not often distressed by his urges to overeat: *"I acknowledge that there are most likely consequences, but it's harder to acknowledge them when they're not visible."* Ben described something similar when asked if he felt distressed about his addictive-like eating, "*I wouldn't say distressing-I'm not worried I'm going to die or have a heart attack... but I'm definitely aware that it's not the healthiest choice, and I know in the long term it will have consequences."* Later on in the interview, Ben explained that it does not become an addiction until there are visible risks, *"I would never call a high school kid who eats a lot of junk food an addict, because they can get away with it... but if it was a morbidly obese fifty year old and they weren't able to take the steps to change the eating habits... I would say it's an addiction."*The distress and emotions surrounding addictive-like eating often resulted in a vicious cycle of overeating: participants would overeat in response to emotions resulting from previously overeating. For example, Kelly explained: *"I think a food addiction needs to have a positive and negative aspect to it, where it initially makes you feel good, or initially you feel better, and then you feel worse about it after, but then that makes you do it again, because you feel worse."* Participants described an inability to escape their pattern of addictive-like eating, as Jane stated, *"... You've tried so many times to get off of it, and it's not working so, why do you just keep on with it?"*

Body image and self-esteem. In addition, perceived weight gain caused by addictive-like eating behaviour impacted participants' body image and self-esteem. Jane explained, *"...[Addictive-like eating] really brings your self-esteem down,"* and discussed her habit of comparing her body size and shape to those around her, including the men in her life. *"You* would *never want your boyfriend to fit in the same size jeans as you, that's so embarrassing, so it's another stress to make sure that you're always the thinner one... It's rationally stupid to think that, but emotionally it's definitely there."*

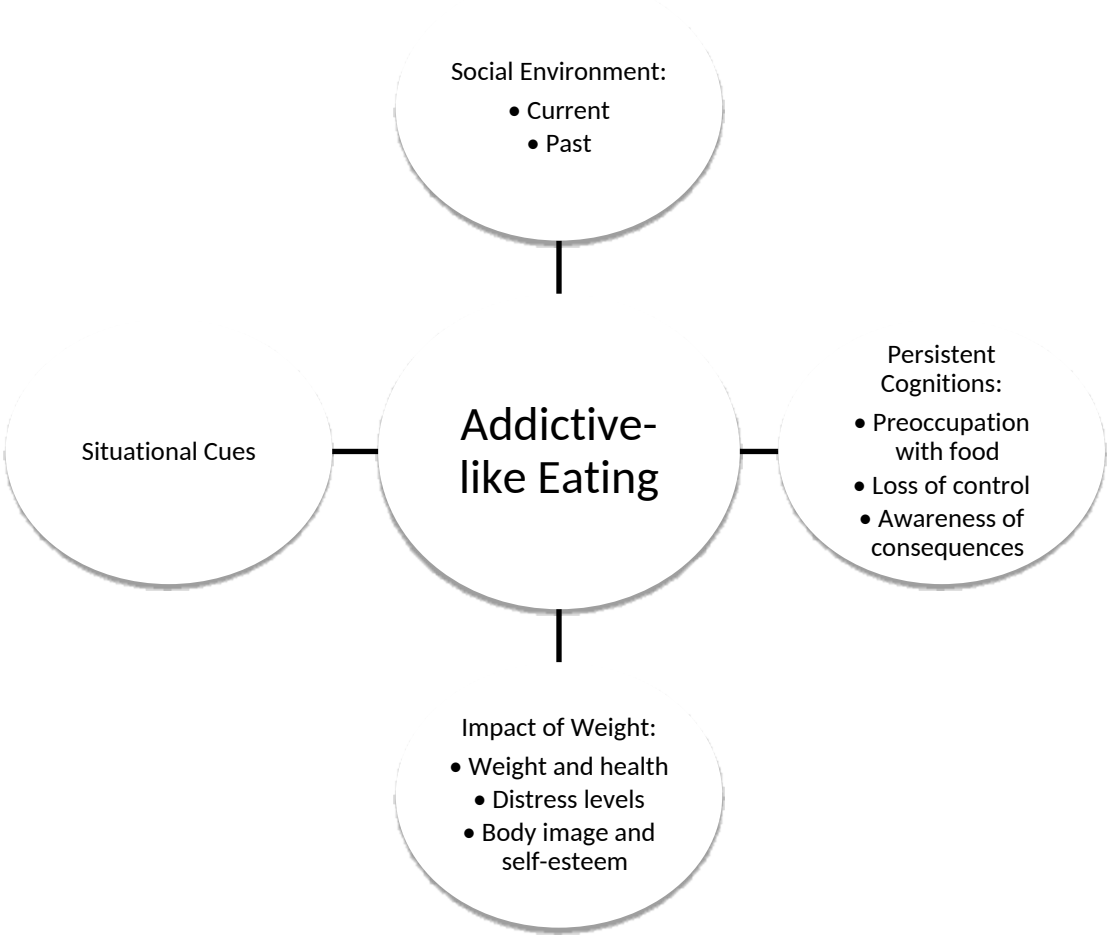

Figure 1.

Discussion

The present qualitative study explored two conceptualizations of addictive-like eating in a sample of men and women with a range of BMIs. Consistent with our recruitment strategy, all participants perceived themselves to be addicted to specific types of food, and half reported they were addicted to eating as well. Participants' descriptions of addictive-like eating focused on cravings for specific foods or types of foods, the social environment, situational cues, persistent cognitions, and the impacts of weight. Thus the development and maintenance of addictive-like eating may involve the interaction of specific food properties with contextual, behavioural, and individual influences. This observation suggests that, in this sample, addictive-like eating is best described by characteristics of both substance use and behavioural addiction frameworks.

Substance Use Perspective and Behavioural Addiction Perspective

All participants in our sample self-identified as experiencing a "food" addiction, and described cravings for specific, energy-dense foods, such as candy, chips, meat, and cheese. Past research has illustrated that highly processed foods, with added fats and/or refined appear to be most related to addictive-like eating behaviour (Schulte, Smeal, & Gearhardt, 2017). No participants described feeling addicted to foods that were unprocessed and low in both refined carbohydrates and fats, which is congruent with a substance-use hypothesis of addictive-like eating. Equivalently, several participants described specific situations in which they engaged more often in addictive-like eating behaviours. This finding is congruent with research illustrating that people can form learned associations between particular situations and the consumption of "addictive" foods, leading to future consumption of these foods when they are in a comparable setting or subjective state (Troisi & Gabriel, 2011). Individuals coping with a substance use disorder may also experience these learned associations when they encounter an environmental cue associated with the substance (Anton, 1999). Thus, the types of foods and

situational nature of the overeating patterns that participants described may be interpreted as consistent with both the substance-based "food addiction" and behavioural "eating addiction" perspectives.

Based on participants' responses, we propose this working definition: *Addictive-like eating is characterized by persistent and uncontrollable urges to overeat typically energy-dense foods, either through episodes of binge eating or grazing throughout the day. These uncontrollable urges to eat are precipitated and maintained by social, situational, and food-related cues. Addictive-like eating may be associated with substantial distress, particularly when it is accompanied by experienced or anticipated weight gain.* An important caveat to this definition is that it describes participants' perceived experiences and conceptualizations of a construct whose clinical utility has yet to be established. We elaborate on this important task below.

Relationship of Addictive-Like Eating to BED

Our findings echo past research that has found substantial but incomplete overlap between addictive-like eating and BED (Gearhardt et al., 2012; Cassin & von Ranson, 2007). Some participants in the present study described their addictive-like eating behaviour as overeating similar to binge eating episodes, whereas others described their addictive-like eating behaviour as grazing throughout the day without binge eating episodes. Our participants tended to emphasize the urges felt prior to overeating, in contrast to binge-eating episodes involving a loss of control over eating. Although we did not conduct diagnostic interviews, the EDE-Q results suggest that many of our participants did not meet BED criteria. Only one participant's EDE-Q results suggests they may have met criteria for BED, as they specified almost daily episodes of out-of-control binge eating. Many participants described grazing patterns and binge

eating that occurred infrequently or intermittently, less often than required for a diagnosis of BED (i.e., binge eating episodes averaging at least once a week for three months; APA, 2013). Nonetheless, these participants described impairment and distress associated with overeating and weight gain. This finding is consistent with previous research that has found similarly elevated levels of self-reported eating pathology, impulsivity, depression, and anxiety, as well as elevated BMI and history of weight cycling, among individuals who met YFAS criteria for food addiction yet did not meet BED criteria, compared to people with BED (Gearhardt et al., 2016; Ivezaj et al., 2016).

However, statistical prediction of distress and pathology beyond recognized eating disorder diagnoses is not sufficient to establish the clinical utility of addictive-like eating. It has been proposed that before the introduction of a new clinical entity, there must be empirical demonstration of clinical utility, i.e., that advantages outweigh potential negative consequences (First et al., 2004). The scope and severity of negative consequences of adopting the food addiction hypothesis are largely unknown. For example, preliminary research has suggested that there may be consequences for food intake (e.g., by leading to dietary restriction; Ruddock, Christiansen, Jones, Robinson, Field, & Hardman, 2016) and stigma (e.g., by reducing self-blame and internalized weight stigma, or by exacerbating weight stigma; Reid, O'Brien, Puhl, Hardman, & Carter, 2018), but long-term impacts are unknown. On the other hand, it is unknown whether assessing and identifying addictive-like eating leads to demonstrable improvements in areas of clinical importance enumerated by First et al. (2004), such as symptom severity, functioning, or the prevention of negative outcomes. Additional research is required to establish, quantify, and weigh potential benefits against potential harms.

Impact of Weight on Distress. As discussed in the fourth theme, participants' distress was focused largely on weight gain rather than the addictive-like eating pattern itself or the negative health consequences often associated with weight gain. Some participants reported distress associated with health concerns, but most participants discussed their fear of weight gain in reference to the way they looked compared to those around them. Participants who did not anticipate or experience weight gain tended to describe lower levels of distress surrounding their addictive-like eating. This trend was most apparent in the men in our sample, who typically described less fear of weight gain as well as lower levels of distress. These results would lead us to hypothesize that distress may occur in response to addictive-like eating in cases where it is accompanied by greater eating pathology. Alternatively, distress may occur with addictive-like eating only when individuals experience or anticipate weight gain, and when weight gain is distressing, perhaps partly a function of gender. Other sources of distress might include experienced or anticipated health consequences, thin-ideal internalization, experiences and perceptions of weight stigma, and/or centrality of weight to self-concept.

An important next step is to empirically investigate these hypotheses through quantitative methods. For example, it would be helpful to further explore the links among distress associated with addictive-like eating, aesthetic aspects of weight gain, and potential health risks associated with weight gain. Lacroix et al. (2019) examined addictive-like eating qualitatively in a clinical sample and found that participants discussed serious health consequences they experienced that were associated with their weight gain, such as sleep apnea and high cholesterol, in addition to aesthetic concerns. Considering that the present sample emphasized aesthetic aspects of weight gain as their primary concern, future quantitative studies should examine larger samples with variability in levels of addictive-like eating severity to determine how much variance in

distress/impairment from addictive-like eating is accounted for by weight-related aesthetic concerns compared with weight-related health concerns. If distress and impairment are driven by body image concerns and weight-related health consequences, these features may warrant greater emphasis in assessment and treatment.

It is also important to determine the influence of addictive-like eating itself on distress and impairment, above and beyond the influence of body image and health concerns. One possibility is that the cognitive and behavioural symptoms of addictive-like eating have little impact beyond the distress associated with resulting weight concerns. This possibility would be consistent with the argument that the construct of addictive-like eating pathologizes the functioning of normal homeostatic processes to regulate food intake (Finlayson, 2017). Specifically, this argument holds that when these homeostatic processes operate in societies with abundant food environments and where the thin ideal prevails, distress may occur, but this distress would be a result of environmental mismatch, rather than pathology within the individual. The possibility that the cognitive and behavioural symptoms of addictive-like eating may have little impact beyond weight gain concerns is consistent with both the substance use disorder and the behavioural addiction perspectives. For example, a smoker is not necessarily distressed by the smoking itself, but instead may be driven to quit by fear of health-related consequences. Similarly, a gambler may not be distressed by the gambling itself, but instead may be distressed by financial consequences. However, evidence suggests it is possible to be fit and fat, as supported by data from the Healthy at Every Size treatment paradigm (e.g., see Hsu, Buckworth, Focht, and O'Connell, 2012), whereas it is difficult to be a smoker and avoid smoking-related health risks, or a gambler and avoid financial loss, which suggests direct

parallels are difficult to draw. Future research should seek to decompose the sources of distress to better inform assessment and treatment.

Strengths, Limitations, and Future Research

This study generated a working definition of addictive-like eating based on qualitative interviews with ten individuals. A major strength of this study is that, in designing the methodology and collecting data, we aimed as much as possible to refrain from aligning ourselves with existing hypotheses regarding the nature of this construct. Specifically, we included individuals who self-identified as having food addiction, or both food and eating addiction, reducing the likelihood that our results would be biased toward either of these perspectives. As we coded themes and interpreted our results, we considered multiple perspectives on addictive-like eating as possible explanations for our findings. Another important strength of our study is that our recruitment procedures were designed to include a diverse sample of individuals mirroring the diversity of people who may experience addictive-like eating. The inclusion of men and women, individuals with a wide range of BMIs, and who exhibited both binge eating and grazing patterns, permitted the comparison of addictive-like eating descriptions among these subgroups. Through these comparisons, our findings reaffirmed the critical importance of clarifying the boundaries between addictive-like eating and BED, and produced important insights related to the importance of weight and gender in experiences of addictive-like eating.

The present study is not without limitations. First, this study employed a qualitative research design involving a sample of just ten individuals. It is inappropriate to generalize these results to other populations, although they may inform the generation of hypotheses regarding the nature of addictive-like eating. Second, although we sought to recruit individuals who felt

addicted to eating and not food, we failed to do so, despite previous research indicating that 10% of 580 students endorsed addiction to eating (vs. 30% to food and 9% to both food and eating; von Ranson et al., 2015). Future research should investigate the attitudes of those who feel addicted to eating. Third, the majority (80%) of our participants were Caucasian, and more than two-thirds were students. The data may have become saturated at only ten participants due to the relatively homogenous sample in terms of ethnicity and age, rather than due to a lack of novel responses. Considering potential cultural influences on perceptions of addictive-like eating, future research should strive to include participants from a wider range of ages, ethnicities, cultural backgrounds, and demographic groups. Fourth, one author coded and analyzed the data. Although we attempted to avoid the introduction of bias into the interpretation of the data, it is impossible to completely avoid this possibility, especially with only one coder. Finally, although we refrained from aligning ourselves with any one perspective on addictive-like eating and considered multiple interpretations of our findings, complete theoretical neutrality is impossible for any researcher to achieve, particularly in the context of polarizing debate. For this reason, we call for additional original qualitative and quantitative research as well as replications by independent investigators to guard against experimenter allegiance effects (Lacroix et al., 2018).

Future qualitative and quantitative research involving clinical and non-clinical populations may clarify whether addictive-like eating contributes incremental clinical utility beyond existing eating disorder diagnoses, and whether the eating pattern itself explains distress beyond what is experienced as a function of anticipated or experienced weight gain. Future research could also clarify further the role of specific types of food in the development of addictive-like eating behaviour, as suggested by Schulte, Potenza, and Gearhardt (2018).

Importantly, themes generated by the present study, such as the impact of social and situational cues, do not appear to be captured by existing scales designed to assess addictive-like eating such as the YFAS 2.0 (Gearhardt et al., 2016), Addiction-like Eating Behaviour Scale (AEBS; Ruddock, Christiansen, Halford, and Hardman, 2017), and RED-13 (Mason et al., 2017), suggesting a potential need for further scale development or refinement. It would be useful for quantitative research to study the themes generated by the present study in larger samples, especially the importance of perceived weight gain to individuals' levels of distress.

Conclusion

The results of this study yielded a working definition characterizing addictive-like eating among our participants. This definition includes uncontrollable urges to overeat due to influences from both external factors and the food itself. Participants' descriptions of these external factors were organized into four themes, including past and present social environments, situational cues, persistent urges to overeat, and perceptions of weight and health. Although participants described certain types of food which would reliably lead them to overeat, our results also emphasize the importance of factors other than food in the development of addictive-like eating. We conclude that the phenomenon of addictive-like eating is not readily captured by existing substance use or behavioural addiction frameworks; instead, characteristics of both were present in individual conceptualizations of addictive-like eating. Although participants' descriptions of addictive-like eating were similar to symptoms of BED, the two constructs do not appear equivalent. Additional research is needed to determine whether addictive-like eating has incremental clinical utility over and above recognized eating disorders, weight gain, and obesity, and to investigate whether the themes which emerged from the present study also characterize addictive-like eating in other samples.

References

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: Author.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Anton, R. F. (1999). What is craving. *Alcohol Research and Health*, *23*(3), 165-173.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77-101. doi:10.1191/1478088706qp063oa

Carr, M. M., Catak, P. D., Pejsa-Reitz, M. C., Saules, K. K., & Gearhardt, A. N. (2017). Measurement invariance of the Yale Food Addiction Scale 2.0 across gender and racial groups. *Psychological Assessment, 29*(8), 1044-1052. doi:10.1037/pas0000403

Cassin, S. E., & von Ranson, K. M. (2007). Is binge eating experienced as an addiction?. *Appetite*, *49*, 687-690. doi:10.1016/j.appet.2007.06.012

Cullen, A. J., Barnett, A., Komesaroff, P. A., Brown, W., O'Brien, K. S., Hall, W., & Carter, A. (2017). A qualitative study of overweight and obese Australians' views of food addiction. *Appetite*, *115,* 62-70. doi:10.1016/j.appet.2017.02.013

Davis, C. (2013). Compulsive overeating as an addictive behaviour: overlap between food addiction and binge eating disorder. *Current Obesity Reports*, *2*, 171-178. doi:10.1007/s13679-013-0049-8

Davis, C., Curtis, C., Levitan, R. D., Carter, J. C., Kaplan, A. S., & Kennedy, J. L. (2011). Evidence that 'food addiction' is a valid phenotype of obesity. *Appetite*, *57*, 711-717. doi:10.1016/j.appet.2011.08.017

Davis, C., & Carter, J. C. (2009). Compulsive overeating as an addiction disorder. A review of theory and evidence. *Appetite*, *53*, 1-8. doi:10.1016/j.appet.2009.05.018

Fairburn, C. G., & Beglin, S. J. (2008). Eating disorder examination questionnaire (EDE-Q 6.0). In C. G. Fairburn (Ed.), *Cognitive behavior therapy and eating disorders* (pp. 309e313). New York: Guilford Press.

Finlayson, G. (2017). Food addiction and obesity: unnecessary medicalization of hedonic overeating. *Nature Reviews Endocrinology*, *13*, 493-498. doi:10.1038/nrendo.2017.61

First, M. B., Pincus, H. A., Levine, J. B., Williams, J. B. W., Ustun, B., & Peele, R. (2004). Clinical Utility as a criterion for revising psychiatric diagnoses. *American Journal of Psychiatry, 161*(6), 946-954. doi:10.1176/appi.ajp.161.6.946

Gearhardt, A. N., Boswell, R. G., & White, M. A. (2014). The association of "food addiction" with disordered eating and body mass index. *Eating behaviors*, *15*, 427-433.

Gearhardt, A. N., Corbin, W. R., & Brownell, K. D. (2009). Preliminary validation of the Yale Food Addiction Scale. *Appetite, 52,* 430-436. doi:10.1016/j.appet.2008.12.003

Gearhardt, A. N., Corbin, W. R., & Brownell, K. D. (2016). Development of the Yale Food Addiction Scale Version 2.0. *Psychology of Addictive Behaviours*, *30,* 113. doi:10.1037/adb0000136

Gearhardt, A. N., Davis, C., Kuschner, R., & D. Brownell, K. (2011). The addiction potential of hyperpalatable foods. *Current Drug Abuse Reviews, 4*, 140-145.

Gearhardt, A. N., White, M. A., Masheb, R. M., Morgan, P. T., Crosby, R. D., & Grilo, C. M. (2012). An examination of the food addiction construct in obese patients with binge eating disorder. *International Journal of Eating Disorders*, *45*, 657-663. doi:10.1002/eat.20957

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*, 59-82. doi:10.1177/1525822X05279903

Hebebrand, J., Albayrak, Ö., Adan, R., Antel, J., Dieguez, C., de Jong, J., ... & van der Plasse, G. (2014). "Eating addiction", rather than "food addiction", better captures addictive-like eating behaviour. *Neuroscience & Biobehavioural Reviews,* 295-306. doi:10.1016/j.neubiorev.2014.08.016

Hsu, Y. T., Buckworth, J., Focht, B. C., & O'Connell, A. A. (2013). Feasibility of a Self-Determination Theory-based exercise intervention promoting Healthy at Every Size with sedentary overweight women: Project CHANGE. *Psychology of Sport and Exercise*, *14*(2), 283-292.

Imperatori, C., Fabbricatore, M., Vumbaca, V., Innamorati, M., Contardi, A., & Farina, B. (2016). Food Addiction: Definition, measurement and prevalence in healthy subjects and in patients with eating disorders. *Rivista di Psichiatria, 51*(2), 60-65. doi:10.1708/2246.24196

Ivezaj, V., White, M. A., & Grilo, C. M. (2016). Examining binge-eating disorder and food addiction in adults with overweight and obesity. *Obesity, 24*, 2064-2069.

Lacroix, E., Oliveira, E., de Castro, J. S., Cabral, J. R., Tavares, H., & von Ranson, K. M. (2019). "There is no way to avoid the first bite": A qualitative investigation of addictive-like eating in treatment-seeking Brazilian women and men. *Appetite*, *137*, 35-46.

Lacroix, E., Tavares, H., & von Ranson, K. M. (2018). Moving beyond the "eating addiction" versus "food addiction" debate: Comment on Schulte et al.(2017). *Appetite*.

Long, C. G., Blundell, J. E., & Finlayson, G. (2015). A Systematic Review of the Application And Correlates of YFAS-Diagnosed 'Food Addiction' in Humans: Are Eating-Related 'Addictions' a Cause for Concern or Empty Concepts?. *Obesity Facts*, *8*, 386-401. doi:10.1159/000442403

Luce, K. H., & Crowther, J. H. (1999). The reliability of the Eating Disorder Examination-Self-Report Questionnaire Version (EDE-Q). *International Journal of Eating Disorders, 25*(3), 349-351. doi:Doi 10.1002/(Sici)1098-108x(199904)25:3<349::Aid-Eat15>3.0.Co;2-M

Malika, N. M., Hayman, L. W., Miller, A. L., Lee, H. J., & Lumeng, J. C. (2015). Low-income women's conceptualizations of food craving and food addiction. *Eating Behaviours*, *18*, 25-29. doi:10.1016/j.eatbeh.2015.03.005

Mason, A. E., Vainik, U., Acree, M., Tomiyama, A. J., Dagher, A., Epel, E. S., & Hecht, F. M. (2017). Improving assessment of the spectrum of reward-related eating: the RED-13. *Frontiers in psychology*, *8*, 795.

Meule, A. (2015). Back by Popular Demand: A Narrative Review on the History of Food Addiction Research. *The Yale Journal of Biology and Medicine, 88*, 295-302.

Mond, J. M., Hay, P. J., Rodgers, B., Owen, C., & Beumont, P. J. V. (2004). Validity of the Eating Disorder Examination Questionnaire (EDE-Q) in screening for eating disorders in community samples. *Behaviour Research and Therapy, 42*(5), 551-567. doi:http://dx.doi.org/10.1016/S0005-7967(03)00161-X

Potenza, M. N. (2008). Review. The neurobiology of pathological gambling and drug addiction: An overview and new findings. *Philosophical Transactions of The Royal Society B Biological Sciences, 363*, 3181-3189. doi:10.1098/rstb.2008.0100

Reid, J., O'Brien, K. S., Puhl, R., Hardman, C. A., & Carter, A. (2018). Food addiction and its potential links with weight stigma. *Current Addiction Reports*, 1-10. doi:10.1007/s40429-018-0205-z

Ruddock, H. K., Christiansen, P., Halford, J. C., & Hardman, C. A. (2017). The development and validation of the Addiction-like Eating Behaviour Scale. *International Journal of Obesity*, *41,* 1710-1717. doi:10.1038/ijo.2017.158

Ruddock, H.K., Christiansen, P., Jones, A., Robinson, E., Field, M., & Hardman, C.A. (2016). Believing in food addiction: helpful or counter-productive for eating behavior? *Obesity*, *24*, 1238-43.

Ruddock, H. K., Dickson, J. M., Field, M., & Hardman, C. A. (2015). Eating to live or living to eat? Exploring the causal attributions of self-perceived food addiction. *Appetite, 95*, 262-268. doi:10.1016/j.appet.2015.07.018

Schulte, E. M., & Gearhardt, A. N. (2017). Development of the Modified Yale Food Addiction Scale Version 2.0. *European Eating Disorders Review, 25*(4), 302-308. doi:doi: 10.1002/erv.2515

Schulte, E. M., Potenza, M. N., & Gearhardt, A. N. (2018). Specific theoretical considerations and future research directions for evaluating addictive-like eating as a substance-based, food addiction: Comment on Lacroix et al.(2018). *Appetite*, *130,* 293-295. doi:10.1016/j.appet.2018.06.026

Schulte, E. M., Potenza, M. N., & Gearhardt, A. N. (2017). A commentary on the "eating addiction" versus "food addiction" perspectives on addictive-like food consumption. *Appetite*, *115*, 9-15.

Schulte, E. M., Smeal, J. K., & Gearhardt, A. N. (2017). Foods are differentially associated with subjective effect report questions of abuse liability. *PLoS One*, *12*(8), e0184220.

Troisi, J. D., & Gabriel, S. (2011). Chicken soup really is good for the soul: "Comfort food" fulfills the need to belong. *Psychological Science*, *22*(6), 747-753.

Vainik, U., Neseliler, S., Konstabel, K., Fellows, L. K., & Dagher, A. (2015). Eating traits questionnaires as a continuum of a single concept. Uncontrolled eating. *Appetite, 90*, 229-239. doi:10.1016/j.appet.2015.03.004

Van Ostrand, G. (2015). *Why some women eat too much: A qualitative study of food-dependent women.* Walden University.

von Ranson, K. M., King-Hope, M., & Tuschen-Caffier, B. (2015). *Developing a measure of eating addiction*. Paper presented at the Eating Disorders Research Society annual meeting, Taormina, Italy.

World Health Organization. (2019). Body mass index - BMI. Retrieved from http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi

Ziauddeen, H., & Fletcher, P. C. (2013). Is food addiction a valid and useful concept?. *Obesity Reviews*, *14*, 19-28. doi:10.1111/j.1467-789X.2012.01046.x

2019-06

Conceptualizing addictive-like eating: A qualitative analysis

Paterson, Carley

Elsevier

https://doi.org/10.1016/j.appet.2019.104326