



HHS Public Access

Author manuscript

Eat Behav. Author manuscript; available in PMC 2016 August 01.

Published in final edited form as:

Eat Behav. 2015 August ; 18: 25–29. doi:10.1016/j.eatbeh.2015.03.005.

Low-Income Women's Conceptualizations of Food Craving and Food Addiction

Nipher M. Malika, M.P.H.^a, Lenwood W. Hayman Jr., Ph.D.^a, Alison L. Miller, Ph.D.^{a,b}, Hannah J. Lee, M.P.H.^a, and Julie C. Lumeng, M.D.^{a,c,d}

^aCenter for Human Growth and Development, University of Michigan, Ann Arbor, MI

^bDepartment of Health Behavior and Health Education, School of Public Health, University of Michigan, Ann Arbor, MI

^cDepartment of Pediatrics, Medical School, University of Michigan, Ann Arbor, MI

^dDepartment of Environmental Health Sciences, School of Public Health, University of Michigan, Ann Arbor, MI

Abstract

Food craving and food addiction have been proposed as targets for obesity focused interventions. However, individuals' conceptualizations of these constructs are not well understood and no studies have employed a qualitative approach. Therefore, we sought to understand how women conceptualize food craving and food addiction. Low-income women with preschool-aged children (2-5 years old) participated in either a semi-structured individual interview or focus group in which they were asked about their conceptualization of eating behaviors among adults and children. All responses were audio-recorded and transcribed. Themes were identified using the constant comparative method of qualitative analysis. Identified themes revealed that the women perceived food craving to be common, less severe and to a degree more humorous than food addiction. It was not felt that food cravings were something to be guarded against or resisted. Food addiction was described in a very “matter of fact” manner and was believed to be identifiable through its behavioral features including a compulsive need to have certain foods all the time. A more detailed understanding of how the general population perceives food craving and food addiction may enable more refined measurement of these constructs with questionnaire measures in the future. In addition, interventions may be designed to use the language most consistent with participants' conceptualizations of these constructs.

Corresponding author: Julie C. Lumeng, M.D., Center for Human Growth and Development, 300 North Ingalls Street, 10th Floor, University of Michigan, Ann Arbor, MI 48109-5406, Phone: 734-647-1102, jlumeng@umich.edu.

Contributors: Authors Hayman, Lumeng and Miller were the primary designers of the study. Hayman gathered data from participants and Malika conducted the literature review and provided summaries of previous research studies. All authors assisted in identifying the themes. Malika wrote the first draft of the manuscript, and all authors contributed to and have approved the final manuscript.

Conflict of interest: All authors declare that they have no conflict of interest.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Keywords

Food craving; food addiction; low-income; women; obesity; preschool-aged children

1. Introduction

Food cravings are reported by most adults as hunger-reducing, mood-improving experiences that can play an important role in eating disorders and obesity (Hill & Heaton-Brown, 1994; Van den Eynde et al., 2012; White, Whisenhunt, Williamson, Greenway, & Netemeyer, 2002). Food cravings are described as an experience contrary to normal hunger and characterized by a desire directed toward a particular food, drink or taste. Food cravings have been associated with increased snacking and higher body mass index (Delahanty, Meigs, Hayden, Williamson, & Nathan, 2002). Interventions to reduce food cravings as an obesity treatment strategy have had mixed success (Alberts, Mulken, Smeets, & Thewissen, 2010; Batra et al., 2013; Boutelle, Kuckertz, Carlson, & Amir, 2014; Forman et al., 2007; Stapleton, Sheldon, Porter, & Whitty, 2011).

Some researchers have attempted to assess craving through self-report questionnaires (Cartwright & Stritzke, 2008; Hill & Heaton-Brown, 1994; Toll, Katulak, Williams-Piehot, & O'Malley, 2008; Weingarten & Elston, 1991). To our knowledge, there is only a single questionnaire that has been designed to assess multiple dimensions of food craving (Cepeda-Benito, Gleaves, Williams, & Erath, 2000). Since its development in 2000, the State and Trait Food Cravings Questionnaire has been used across the world (Cepeda-Benito, Gleaves, Fernández, et al., 2000; Franken & Muris, 2005; Meule & Kübler, 2012; Nijs, Franken, & Muris, 2007; Noh et al., 2008). Items in this questionnaire, however, were not generated from qualitative work but rather from drug craving questionnaires (Tiffany & Drobes, 1991; Tiffany, Singleton, Haertzen, & Henningfield, 1993) and from pre-existing concepts of food craving (Harvey, Wing, & Mullen, 1993; Macdiarmid & Hetherington, 1995; Michener & Rozin, 1994; Overduin & Jansen, 1996; Rodin, Mancuso, Granger, & Nelbach, 1991; Schlundt, Virts, Sbrocco, Pope-Cordle, & Hill, 1993; Weingarten & Elston, 1991). Weingarten and Elston (1991) administered a questionnaire to college students that investigated the prevalence of food cravings and the most craved foods. Students were able to identify specific triggers of craving and there was positive affect upon indulging in a craving. A very detailed description of food craving was provided prior to answering the question items, however, which may have affected how participants responded. These questionnaire-based approach may threaten the validity of information gleaned using these questionnaires because it imposes a conceptual model developed by the researchers. The threat to validity may be a particular problem when study participants differ from the questionnaire developers with regard to culture, socioeconomic status, education, age, gender, or other key characteristics.

More recently, the idea that obesity might be conceptualized within an addiction framework has received increasing attention. There remains a persistent debate, however, regarding the validity of food addiction as a construct (Gearhardt, Grilo, DiLeone, Brownell, & Potenza, 2011; Rogers & Smit, 2000; Ziauddeen & Fletcher, 2013; Ziauddeen, Farooqi, & Fletcher, 2012). To begin to investigate food addiction, questionnaires have been developed that

attempt to measure it (Gearhardt, Corbin, & Brownell, 2009). Perceptions of food addiction were also assessed in a study in which participants rated five statements regarding the addictive properties of food in relation to obesity (Lee et al., 2013). Results indicated support for the idea that obesity was a form of food addiction. However, the study did not probe for participants' definition of food addiction. Thus, despite the growing scientific literature in the area of food addiction, we have been unable to identify any studies that describe the general population's understanding of the constructs.

To our knowledge, there are no published qualitative studies that address how adults perceive food cravings and food addiction. Therefore we sought to understand how women conceptualize food cravings and food addiction. We also sought to determine how women conceptualize these constructs in preschool-aged children, since early childhood is a critical period for the development of food preferences and eating behaviors and may be a sensitive period for intervention (Birch & Fisher, 1998; Faith, Scanlon, Birch, Francis, & Sherry, 2004; Saunders, 2007; Skinner, Carruth, Wendy, & Ziegler, 2002).

2. Methods

2.1 Ethics Statement

This study was approved by the University of Michigan Institutional Review Board. All participants provided written informed consent and were compensated for their time.

2.2 Study Sample

Participants were women recruited from the community in south-central Michigan. Inclusion criteria were: 1) age 18 years, 2) English speaking 3) mother of a child aged 2-5yrs inclusive, 4) < 4 years of college, 5) eligible for a social program for low-income United States families (Medicaid, Women, Infants, and Children Programs, or Head Start).

The mean age of the 61 participants was 29.6 years; 49.3% were single; 47.5% were non-Hispanic Black, 44.3% non-Hispanic White, and 6.6% Hispanic; 25% had a high school diploma or less. Based on self-reported height and weight, 24.6% were normal weight (BMI<24.9), 27.9% overweight (25 BMI<30), and 42.6% obese (BMI 30).

2.3 Study Design

Women participated in either a semi-structured individual interview or a focus group conducted by a research psychologist trained in interview administration. All sessions focused on the women's conceptualization of several eating behaviors in adults and children. There were 9 focus groups with 31 participants and 43 interviews. We conducted both interviews and focus groups as we hypothesized that different approaches could yield different themes regarding sensitive topics. In subsequent analysis, we found this not to be the case and therefore combined both methodologies for analysis.

Sessions were conducted in a private room at a local community center. An interview guide was developed by 3 of the authors. Sessions began with the interviewer explaining the main purpose as understanding women's opinions about eating behaviors. The data described in this report are responses to the open-ended questions displayed in Table 1.

Sessions were audio-recorded, transcribed and reviewed for accuracy. Themes were generated using the constant comparative method (Glaser, 1965) by five independent readers. After generating themes independently, the readers met, and came to a consensus regarding identified themes. Supporting quotes were then identified.

3. Results

Five themes were identified and are described below.

Theme 1: Food craving is a strong want or desire for food and is an acceptable behavior

Mentioned in all 9 focus groups and in all 43 interviews, the women described craving as an intense desire or longing.

You just feel like you can taste it, you feel like you can smell it and just like you [think], “Oh that'd be so good.” So it's like a want, a desire.

It's just like this big want. It sounds dumb but you can almost just taste it and that makes you want it even more.

Something they haven't had in a little while and they got a taste for it and they just want it.

If I didn't have carrots at that moment, I craved it and craved it until I had it and it was like, (sighs) “It's good. It's yummy. It's satisfying”

Food craving was described as acceptable with little attempt to change it, avoid it or resist it in all 9 focus groups and in 41 of the 43 interviews.

A craving might also be your body telling you you're not getting enough of this nutrient-you need to eat this kind of food. If I'm craving steak or hamburger or just beef in general I know that I probably need the iron in my body.

Mentally I think it's something that makes you feel it's necessary to make you happy. That's why I think people crave food; 'cause it's a necessity for happiness.

When you have a craving, you have a taste for it. You're not gonna just sit here and eat it all day every day. It's a craving so it goes away.

I honestly think they crave food because at one point in their life they probably had this food and they enjoyed it so much that they remembered. I like grandma's fried chicken; I remember when she cooked it that Thanksgiving-- it was so good. And then it's like, “Ooh I just hope she cooks it this Thanksgiving!”

Theme 2: Food addiction exists and is characterized by specific behavioral features

As mentioned in all 9 focus groups and in all 43 interviews, women felt that food addiction exists. They felt that they had seen it and they knew what it looked and felt like. Mentioned in 3 of the 9 focus groups and in 23 of the 43 interviews, the women described food addiction based on its behavioral features and negative physical consequences.

When I was a heavy soda drinker I didn't even taste it; I just drank it just to drink it. Then it wouldn't be until I say “That's a lot of calories, I should quit” that I start

getting the headaches and so I would maybe drink some just to kind of curve the headache.

You just can't figure out why you've had this headache for the last couple hours or the last two days and... it's, "Ooh wow I usually eat that Hershey's with almonds every day and I haven't had one in three days is that why I'm irritable?" or, "Is that why I have a headache?"

Characteristics seen or perceived in those with food addiction looked like a compulsive need to always have the food readily accessible (mentioned in 7 of 9 focus groups and in 27 of 43 interviews). The women expressed how they or others with food addiction, had a stock of food close by - whether it was at the office, in a car, or at home. When certain foods were not available, food-addicted individuals would go out of their way to obtain them. This would include going shopping at odd hours of the night, borrowing money or spending money they did not have.

[My friend is] addicted to hot sauce! This girl takes hot sauce everywhere she go! I went in her cabinet and she bought like a whole case of Louisiana hot sauce. So the two cabinets right above the stove -- nothing' but hot sauce!

I know some people have a Starbucks addiction... I have a friend that I was just helping her the other day apply [for] her food stamps 'cause she can barely afford anything and then on the way to go get food stamps she's like, "I think I got enough money to go get a Starbucks". I was like, "Ooh my gosh--are you kidding me?" But that's her. She's gotta have it every day and she feels like she's lost without having it.

Um, their house is stocked up with them. You know if somebody really like Oreos or chocolate chip cookies they're gonna have their pantry pretty much stocked up with it. You know they're gonna have it in their car, in their office you know.

Theme 3: Food cravings and food addictions are similar in that a food addiction is an uncontrolled food craving. However, food cravings are more common and less severe than are food addictions

In 8 of the 9 focus groups and in 42 of the 43 interviews, most women distinguished between food cravings and food addiction. Cravings were perceived as a common occurrence experienced by most people in all 9 focus groups and all 43 interviews, while food addiction was seen as an uncontrolled, severe extension of craving in 8 of the 9 focus groups and in 27 of the 43 interviews. The foods given as examples for craving as compared to addiction differed slightly. All foods to which one could be addicted could also be craved, however, not all foods that were craved were also potentially addictive. Specifically, some foods that were mentioned as being craved were perceived as signifying the body needing a specific nutrient. In contrast, foods mentioned to which one could be addicted were exclusively highly processed foods high in added sugar and/or fat.

A food craving is different than an addiction is, because an addiction is something that you think you can't live without. A craving is more of, "Oh I haven't had whatever restaurant in a while I really want their main dish"...[an addiction is if] I

go back to that restaurant every single day and get that same dish over and over and over again.

Craving is something you have sometimes; like something you love/like [but] haven't had in months. I'm like, "Wow I really think imma be happy if I have that today." But it's not the same if you were craving it every day; that is an addiction.

Yeah you can have a craving for something for a while before you satisfy it but an addiction is something that without help you can't [go without]; not without some kind of intervention. You can't really control yourself and you just have to have it-- whatever it is-- regardless of the outcomes of it.

Theme 4: The tone in which women described food cravings was more humorous than the way they described food addictions, which was more serious and matter of fact

Mentioned in all 9 focus groups and in 39 of 43 interviews, cravings were seen as an everyday, ordinary issue that everyone experienced and had funny stories to tell as a result of it. Food addiction was not perceived as immoral, reflecting a lack of will, or a character failing. Instead, addiction was seen as simply a behavioral phenomenon; it was not viewed as reflective of a moral failing. Views consistent with the perception that food addiction is not reflective of a moral failing were mentioned in 3 of 9 focus groups and in 22 of 43 interviews.

I crave chocolate. I don't like the taste of it but that one certain time of the month my body gets craving it so bad it's like I have to go down and find like either a Mounds or a Milky Way. I just eat like a piece of it and the craving goes away. They say cravings are only supposed to last seven minutes. I believe they lied. I tell you--it takes me longer than that to get to the store. (laughs).

I was addicted to food. I didn't eat out of emotions, I didn't eat for any other reason other than, I just had to have it.

Theme 5: It's common for children to have food cravings, but they can only become addicted to foods if their parents "let" them

Food addiction was felt to be possible in children whose parents facilitated it as mentioned in 4 of 9 focus groups and in 18 of 43 interviews. It was believed that if a parent did not feed into a child's craving, the child would not develop an addiction to the particular food.

Honestly I think the only way a child can – any child – can have an addiction, to something is if the parent gives them an overabundance of it. 'Cause there's no way they can get it themselves in preschool.

Well, being that preschool children can't go and buy anything, if it's an addiction then that means someone who has the money to purchase whatever it is, is helping them in that addiction. So, I guess it could if you have someone that's constantly giving you what it is you want all the time.

Again the doing of the parents. You lead by example. If you have a food problem most likely your child's gonna have a food problem. The only way they're going to

[have an addiction] is if the parent, or grandparent, whoever's around is teaching them.

4. Discussion

There were several key findings of this study. Food craving was not only relatable to all women, it was often described with humor and not perceived as a problem. Food addiction, however, was as real as drug addiction and was identified by its behavioral features, including always needing to have the food available.

Current interventions aimed at reducing food craving (Alberts et al., 2010; Forman et al., 2007) have operated under the assumption that people are attempting to suppress the urge to eat craved foods, the same way a person may attempt to suppress the urge to use drugs or alcohol, yet fail. Tactics such as mindfulness-based strategies have been used in an attempt to reduce craving. Such strategies promote acceptance and encourage a nonjudgmental turning toward cravings (Ie, Ngnoumen, & Langer, 2014). The results of our qualitative work, however suggest that these intervention approaches may not be effective for obesity prevention in some demographic groups such as the low-income women we interviewed. In our cohort, food craving was not associated with feeling the need to suppress the behavior and was not described as aversive or as an experience to be avoided or fought against. Instead, food craving was described as acceptable, with little attempt to change, avoid or control it.

With the concept of food addiction being a highly debated topic in the scientific literature and mainstream media, we had anticipated that our current population would not believe in such a concept. Furthermore, we believed it possible that they could have been offended by the term on the premise that it implies a connection between obesity and drug addiction or alcoholism, which are stigmatized disorders (DePierre, Puhl, & Luedicke, 2013). Our results demonstrated that not only do the women believe in the concept of food addiction, they embraced it. Interventions framing behaviors as food addiction may be constructive. It is also notable, however, that there was somewhat less cohesion in the conceptualizations of food addiction as compared to food craving. This may be because the concept is relatively newer. Researchers and interventionists should therefore attend to the possibility that the conceptualization of food addiction within this population may be continuing to evolve.

There may be limitations to current questionnaires measuring food craving and addiction, which have been developed and validated primarily among cohorts of college students (Cartwright & Stritzke, 2008; Cepeda-Benito et al., 2000; Cepeda-Benito, et al., 2000; Gearhardt et al., 2009; Meule, Hermann, & Kubler, 2014; Nijs et al., 2007; Weingarten & Elston, 1991; White et al., 2002) as well as in treatment-seeking overweight or obese individuals (Burmeister, Hinman, Koball, Hoffmann, & Carels, 2013; Davis et al., 2011; Gearhardt et al., 2012; Meule, Lutz, Vögele, & Kübler, 2012). Given our results, it is not clear whether these questionnaires will function as expected in the general non-treatment seeking population or in low-income communities.

An area for future work is to develop questionnaire items to assess food craving and addiction that are generated from the target population's conceptualization of the given

construct, using the language that the target population employs to describe the construct. The framing of food craving as a behavior to be guarded against, as in most commonly used questionnaires, may represent a middle-or upper-income conceptualization of food craving. Middle to upper income populations tend to view health as the absence of disease and a battle to be fought, while lower income populations view health as “feeling good” and having an overall sense of well-being (Inglis, Ball, & Crawford, 2005; Smith & Holm, 2010; Warin, Turner, Moore, & Davies, 2008). Cravings that could contribute to obesity may therefore be viewed as a behavior to be guarded against among middle-to upper-income populations. In contrast, our qualitative results suggest that the low-income women in our study did not frame craving as a behavior to be resisted or as an aversive experience, but often framed it with humor and within a context of overall well-being. In summary, questionnaires that frame food craving as a behavior to be resisted or guarded against may not resonate with populations who do not view food craving in this manner.

The results of the current study should be interpreted in light of several limitations. First, an African American male interviewer conducted the focus groups and interviews, which may have contributed to bias in the participants' responses. In addition, the results may not be generalizable to other populations.

In summary, we found that low-income women view food craving and food addiction as similar and common behaviors, with food addiction framed as cravings that are out of control. Food cravings were often viewed with humor, not as a temptation to be vigorously resisted. However, women felt that parents should restrain their children from overindulging in the foods they crave as these could turn into an addiction. Future interventions might consider addressing the constructs of food craving and food addiction as focal points and in so doing employ language and conceptualizations of these constructs that resonates with the target population.

Acknowledgments

Supported by R01HD069179-03S1 from the National Institutes of Health.

Role of funding sources: This research was funded by Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant #: NIH 5R01HD069179. NIH had no role in the study design, collection, analysis or interpretation of the data, writing the manuscript or the decision to submit the paper for publication

References

- Alberts HJEM, Mulkens S, Smeets M, Thewissen R. Coping with food cravings. Investigating the potential of a mindfulness-based intervention. *Appetite*. 2010; 55(1):160–163.10.1016/j.appet.2010.05.044 [PubMed: 20493913]
- Batra P, Das SK, Salinardi T, Robinson L, Saltzman E, Scott T, et al. Roberts SB. Relationship of cravings with weight loss and hunger. Results from a 6 month worksite weight loss intervention. *Appetite*. 2013; 69:1–7.10.1016/j.appet.2013.05.002 [PubMed: 23684901]
- Birch LL, Fisher JO. Development of eating behaviors among children and adolescents. *Pediatrics*. 1998; 101(3 Pt 2):539–549. [PubMed: 12224660]
- Boutelle KN, Kuckertz JM, Carlson J, Amir N. A pilot study evaluating a one-session attention modification training to decrease overeating in obese children. *Appetite*. 2014; 76:180–185.10.1016/j.appet.2014.01.075 [PubMed: 24512975]

- Burmeister JM, Hinman N, Koball A, Hoffmann DA, Carels RA. Food addiction in adults seeking weight loss treatment. Implications for psychosocial health and weight loss. *Appetite*. 2013; 60(1): 103–110.10.1016/j.appet.2012.09.013 [PubMed: 23017467]
- Cartwright F, Stritzke WGK. A multidimensional ambivalence model of chocolate craving: construct validity and associations with chocolate consumption and disordered eating. *Eating Behaviors*. 2008; 9(1):1–12.10.1016/j.eatbeh.2007.01.006 [PubMed: 18167319]
- Cepeda-Benito A, Gleaves DH, Fernández MC, Vila J, Williams TL, Reynoso J. The development and validation of Spanish versions of the State and Trait Food Cravings Questionnaires. *Behaviour Research and Therapy*. 2000; 38(11):1125–1138.10.1016/S0005-7967(99)00141-2 [PubMed: 11060941]
- Cepeda-Benito A, Gleaves DH, Williams TL, Erath SA. The development and validation of the state and trait food-cravings questionnaires. *Behavior Therapy*. 2000; 31(1):151–173.10.1016/S0005-7894(00)80009-X
- Davis C, Curtis C, Levitan RD, Carter JC, Kaplan AS, Kennedy JL. Evidence that “food addiction” is a valid phenotype of obesity. *Appetite*. 2011; 57(3):711–717.10.1016/j.appet.2011.08.017 [PubMed: 21907742]
- Delahanty LM, Meigs JB, Hayden D, Williamson DA, Nathan DM. Psychological and Behavioral Correlates of Baseline BMI in the Diabetes Prevention Program (DPP). *Diabetes Care*. 2002; 25(11):1992–1998.10.2337/diacare.25.11.1992 [PubMed: 12401745]
- DePierre JA, Puhl RM, Luedicke J. A New Stigmatized Identity? Comparisons of a “Food Addict” Label With Other Stigmatized Health Conditions. *Basic and Applied Social Psychology*. 2013; 35(1):10–21.10.1080/01973533.2012.746148
- Faith MS, Scanlon KS, Birch LL, Francis LA, Sherry B. Parent-child feeding strategies and their relationships to child eating and weight status. *Obesity Research*. 2004; 12(11):1711–1722.10.1038/oby.2004.212 [PubMed: 15601964]
- Forman EM, Hoffmann KL, McGrath KB, Herbert JD, Brandsma LL, Lowe MR. A comparison of acceptance- and control-based strategies for coping with food cravings: An analog study. *Behaviour Research and Therapy*. 2007; 45(10):2372–2386.10.1016/j.brat.2007.04.004 [PubMed: 17544361]
- Franken IHA, Muris P. Individual differences in reward sensitivity are related to food craving and relative body weight in healthy women. *Appetite*. 2005; 45(2):198–201.10.1016/j.appet.2005.04.004 [PubMed: 15949869]
- Gearhardt AN, Corbin WR, Brownell KD. Preliminary validation of the Yale Food Addiction Scale. *Appetite*. 2009; 52(2):430–436.10.1016/j.appet.2008.12.003 [PubMed: 19121351]
- Gearhardt AN, Grilo CM, DiLeone RJ, Brownell KD, Potenza MN. Can food be addictive? Public health and policy implications. *Addiction*. 2011; 106(7):1208–1212.10.1111/j.1360-0443.2010.03301.x [PubMed: 21635588]
- Gearhardt AN, White MA, Masheb RM, Morgan PT, Crosby RD, Grilo CM. An examination of the food addiction construct in obese patients with binge eating disorder. *The International Journal of Eating Disorders*. 2012; 45(5):657–663.10.1002/eat.20957 [PubMed: 22684991]
- Glaser B. The Constant Comparative Method of Qualitative Analysis. *Social Problems*. 1965:436–445.
- Harvey J, Wing RR, Mullen M. Effects on food cravings of a very low calorie diet or a balanced, low calorie diet. *Appetite*. 1993; 21(2):105–115.10.1016/0195-6663(93)90003-3 [PubMed: 8285649]
- Hill AJ, Heaton-Brown L. The experience of food craving: a prospective investigation in healthy women. *Journal of Psychosomatic Research*. 1994; 38(8):801–814. [PubMed: 7722960]
- Ie, A.; Ngnoumen, CT.; Langer, EJ. *The Wiley Blackwell Handbook of Mindfulness*. John Wiley & Sons; 2014.
- Inglis V, Ball K, Crawford D. Why do women of low socioeconomic status have poorer dietary behaviours than women of higher socioeconomic status? A qualitative exploration. *Appetite*. 2005; 45(3):334–343.10.1016/j.appet.2005.05.003 [PubMed: 16171900]
- Lee NM, Lucke J, Hall WD, Meurk C, Boyle FM, Carter A. Public Views on Food Addiction and Obesity: Implications for Policy and Treatment. *PLoS ONE*. 2013; 8(9):e74836.10.1371/journal.pone.0074836 [PubMed: 24086382]

- Macdiarmid JJ, Hetherington MM. Mood modulation by food: an exploration of affect and cravings in “chocolate addicts”. *The British Journal of Clinical Psychology / the British Psychological Society*. 1995; 34(Pt 1):129–138. [PubMed: 7757035]
- Meule A, Hermann T, Kubler A. A short version of the Food Cravings Questionnaire—Trait: the FCQ-T-reduced. *Frontiers in Psychology*. 2014; 510.3389/fpsyg.2014.00190
- Meule A, Kübler A. Food cravings in food addiction: The distinct role of positive reinforcement. *Eating Behaviors*. 2012; 13(3):252–255.10.1016/j.eatbeh.2012.02.001 [PubMed: 22664405]
- Meule A, Lutz A, Vögele C, Kübler A. Food cravings discriminate differentially between successful and unsuccessful dieters and non-dieters. Validation of the Food Cravings Questionnaires in German. *Appetite*. 2012; 58(1):88–97.10.1016/j.appet.2011.09.010 [PubMed: 21983051]
- Michener W, Rozin P. Pharmacological versus sensory factors in the satiation of chocolate craving. *Physiology & Behavior*. 1994; 56(3):419–422.10.1016/0031-9384(94)902836 [PubMed: 7972390]
- Nijs IMT, Franken IHA, Muris P. The modified Trait and State Food-Cravings Questionnaires: Development and validation of a general index of food craving. *Appetite*. 2007; 49(1):38–46.10.1016/j.appet.2006.11.001 [PubMed: 17187897]
- Noh J, Kim J, Nam H, Lim M, Lee D, Hong K. Validation of the Korean version of the General Food Cravings Questionnaire-Trait (G-FCQ-T). *Korean Journal of Clinical Psychology*. 2008; 27:1039–1051.
- Overduin J, Jansen A. Food Cue Reactivity in Fasting and Non-Fasting Subjects. *European Eating Disorders Review*. 1996; 4(4):249–259.10.1002/(SICI)1099-0968(199612)4:4<249::AID-ERV158>3.0.CO;2-3
- Rodin J, Mancuso J, Granger J, Nelbach E. Food cravings in relation to body mass index, restraint and estradiol levels: A repeated measures study in healthy women. *Appetite*. 1991; 17(3):177–185.10.1016/0195-6663(91)90020-S [PubMed: 1799280]
- Rogers PJ, Smit HJ. Food craving and food “addiction”: a critical review of the evidence from a biopsychosocial perspective. *Pharmacology, Biochemistry, and Behavior*. 2000; 66(1):3–14.
- Saunders KL. Preventing obesity in pre-school children: a literature review. *Journal of Public Health (Oxford, England)*. 2007; 29(4):368–375.10.1093/pubmed/fdm061
- Schlundt DG, Virts KL, Sbrocco T, Pope-Cordle J, Hill JO. A sequential behavioral analysis of cravings sweets in obese women. *Addictive Behaviors*. 1993; 18(1):67–80.10.1016/0306-4603(93)90010-7 [PubMed: 8465679]
- Skinner JD, Carruth BR, Wendy B, Ziegler PJ. Children's food preferences: a longitudinal analysis. *Journal of the American Dietetic Association*. 2002; 102(11):1638–1647. [PubMed: 12449287]
- Smith LH, Holm L. Social class and body management. A qualitative exploration of differences in perceptions and practices related to health and personal body weight. *Appetite*. 2010; 55(2):311–318.10.1016/j.appet.2010.07.001 [PubMed: 20620186]
- Stapleton P, Sheldon T, Porter B, Whitty J. A randomised clinical trial of a meridian-based intervention for food cravings with six-month follow-up. *Behaviour Change*. 2011; 28(1):1–16.
- Tiffany ST, Drobes DJ. The development and initial validation of a questionnaire on smoking urges. *British Journal of Addiction*. 1991; 86(11):1467–1476.10.1111/j.1360-0443.1991.tb01732.x [PubMed: 1777741]
- Tiffany ST, Singleton E, Haertzen CA, Henningfield JE. The development of a cocaine craving questionnaire. *Drug and Alcohol Dependence*. 1993; 34(1):19–28.10.1016/0376-8716(93)90042-O [PubMed: 8174499]
- Toll BA, Katulak NA, Williams-Piehotla P, O'Malley S. Validation of a Scale for the Assessment of Food Cravings among Smokers. *Appetite*. 2008; 50(1):25–32.10.1016/j.appet.2007.05.001 [PubMed: 17574300]
- Van den Eynde F, Koskina A, Syrad H, Guillaume S, Broadbent H, Campbell IC, Schmidt U. State and trait food craving in people with bulimic eating disorders. *Eating Behaviors*. 2012; 13(4):414–417.10.1016/j.eatbeh.2012.07.007 [PubMed: 23121801]
- Warin M, Turner K, Moore V, Davies M. Bodies, mothers and identities: rethinking obesity and the BMI. *Sociology of Health & Illness*. 2008; 30(1):97–111.10.1111/j.1467-9566.2007.01029.x [PubMed: 18254835]

- Weingarten HP, Elston D. Food cravings in a college population. *Appetite*. 1991; 17(3):167–175. [PubMed: 1799279]
- White MA, Whisenhunt BL, Williamson DA, Greenway FL, Netemeyer RG. Development and validation of the food-craving inventory. *Obesity Research*. 2002; 10(2):107–114.10.1038/oby.2002.17 [PubMed: 11836456]
- Ziauddeen H, Farooqi IS, Fletcher PC. Obesity and the brain: how convincing is the addiction model? *Nature Reviews Neuroscience*. 2012; 13(4):279–286.10.1038/nrn3212
- Ziauddeen H, Fletcher PC. Is food addiction a valid and useful concept? *Obesity Reviews*. 2013; 14(1):19–28.10.1111/j.1467-789X.2012.01046.x [PubMed: 23057499]

Highlights

- Low-income women perceived food craving to be common and humorous.
- Low-income women did not feel that food cravings were something to be resisted.
- Low-income women described food addiction as less common and more serious.
- The findings may aid the creation of more refined measures of these constructs.
- Interventions may be more effective if they attend to these beliefs.

Table 1

Open-ended focus group and interview questions.

Open-Ended Questions
Can you tell me why you think that some people crave foods?
What does it feel like to crave a food?
Some people have told me that they think food cravings can turn into addiction, and other people don't think so. What do you think?
Why do you say that?
Can you describe for me what it looks like when someone is addicted to food or to a food?

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript