Cognitive and Emotional Influences on Eating Behaviour: A Qualitative Perspective

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ABSTRACT: Considering that individuals who are within a healthy weight range may experience different thoughts about food to those who are already overweight or obese triggers the need to understand the nature, challenges, and coping strategies of food-related thinking styles in this population in relation to those who are either overweight or obese. Analysis of 6 semi-structured qualitative interviews with individuals who are either at risk of being overweight (body mass index [BMI] = 23-24.99), or above a healthy weight (BMI ⩾ 25), revealed 3 overarching themes: (1) Why am I all about food? (2) Jekyll and Hyde, and (3) Emotional attachment to food. These findings highlighted a link between dieting and negative thinking, which foster unhealthy eating patterns. Therefore, intuitive eating may offer a useful alternative to re-establish a healthier relationship with food.

KEYWORDS: Eating; Attitudes; Food-related cognitions; Qualitative; Emotional Influences

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Introduction

Excess body weight is directly associated with numerous serious health conditions and despite the general appreciation of the dangerous impact of weight gain, incidence rates have been steadily climbing over the last decades.[1] Pioneering work on the cause of weight gain has suggested specific anchors, including taste, health, social status, and cost, predict particular food patterns, while later investigations have increasingly recognised the role of cognitive and motivational components, which are particularly relevant in light of the access to a wide range of foods in Western societies adding to autonomy in choices.[2–4] Moreover, several researchers have recognised the impact of the emotional state on individuals' eating behaviour. According to Canetti et al (2002),[5] food choices regarding the quantity and frequency are not limited to a hunger response. Whereas healthy weight individuals alter their food intake when satiated, people who are overweight or obese will eat regardless of their physiological state. Instead, they are more responsive to internal situational or emotional factors, such as negative mood, fatigue, or boredom.[6,7] Paradoxically, being on a diet may further intensify the tendency to engage in overeating which is likely to occur as dieters are generally more prone to emotional eating.[2–5]

Evidence has highlighted the need to explore weight-related differences in food-related cognitive processes, as individuals at a healthy weight may engage in a different thinking style to those who are above a healthy weight, which is defined as exceeding a body mass index (BMI) of 25. In this context, food thought suppression and preoccupation with food have been associated with a higher body weight.[8,9] Furthermore, Beck[10] has defined the concept of self-sabotaging thinking as a common barrier to weight loss, which includes all-or-nothing thinking, mind-reading, catastrophizing, and exaggerated thinking. This also creates a vicious cycle of dysfunctional cognitions triggering further negative, dysfunctional behaviours and emotions and can be detrimental for self-efficacy and motivation to maintain weight loss over time.[10]

Although research has explored underlying food-related thinking style for food choices in people with obesity, people who have lost weight, or people who have regained weight, scarce evidence has focussed on those with a healthy weight. Although some research studied food-related thoughts in the entire population with a healthy weight,[11] there is still scarce evidence for weight subgroups, for example, individuals at the upper healthy weight range who are at increased risk of falling into the overweight category. Based on this limitation, the researchers of this particular study recommended to explore food-related thoughts in people who still are with a healthy weight range, but display an increased risk of transitioning into the overweight category, defined by the WHO as a BMI between 23 and 24.99 (World Health Organization). This could add valuable understanding by determining why people gain weight to an unhealthy extent in the first place, and to what extent initial beliefs and thoughts around eating may differ to thinking styles that occur as a result of perceived weight status.

The current study aimed to explore the thinking styles of people who are at risk of gaining excess weight for a more in-depth appreciation of how particular thought patterns may trigger eating behaviours linked to weight gain.

Method

Participants

Weight range was defined a priori as either at the upper healthy weight range or above a healthy weight. The only other inclusion criteria was being an adult, and the researchers focussed on

Table 1. Age and weight category for interviewees.

PSEUDONYM	WEIGHT CATEGORY	AGE
Anna	Overweight[a]	33
Louise	Overweight	31
Stephanie	Upper healthy range[b]	34
Jane	Upper healthy range	22
Tom	Overweight	35
Charlie	Upper healthy range	39

[a]Body mass index ⩾ 25.
[b]Body mass index = 23-24.99.

including at least 1 male perspective and an equal balance from the 2 weight categories. As shown in Table 1, a total of 6 participants from 2 weight categories, including 3 participants who were at-risk of becoming overweight (n = 3, BMI range, 23-24.99) and 3 participants above a weight considered healthy (BMI ⩾ 25), participated in this study. Participants were recruited via social media platforms and forums with an invitation to participate to the study, asking them to provide their contact email on an anonymous weblink. No incentives or compensation was provided for participation. Consent was obtained prior to participation and participants were debriefed after the interview.

Procedure

A semi-structured interview schedule was designed and tailored to the present study to allow in-depth exploration of food-related cognitive patterns and dysfunctional thoughts,[10] as well as coping strategies in the context of food-related challenges. Participants were asked to describe their relationship with food in general, before asking them to discuss more particular aspects of food-related thoughts, such as reoccurring thoughts they experienced before, during, and after eating, and how these thoughts effected their day-to-day life and emotions. An additional focus was to explore how participants dealt with more challenging thoughts, either by applying mental strategies or actions that prevented these thoughts. Finally, participants were asked about cultural influences on their food intake, such as religion, upbringing, or family circumstances, as well as how their perceived weight status influenced their self-image and beliefs. Following approval from the University Psychology Research Ethics Committee, and with obtained permission and written consent from participants prior to the interview, all conversations were audio-recorded for accuracy of transcription and analysis. Each interview lasted between 45 and 60 minutes. Confidentiality was ensured by not mentioning participant names while the audio-recorder was operating. Transcribed data were also de-identified with subject identifiers assigned to each participant. Thematic Analysis[12] guided the identification, analysing, and reporting of thematic patterns. The analysis followed the 6 phases recommended by Braun and Clark, including data familiarisation, coding and identification of appropriate labels, searching for coherent and meaningful patterns that form a theme, reviewing of themes, defining and naming the themes, and the analytic narrative. The emerging themes were reviewed by an independent reviewer.

Results

As can be seen in Table 2, a total of 3 central themes emerged from the interview narratives: (1) Why am I all about food? (2) Jekyll and Hyde, and (3) Emotional attachment to food.

Why am I all about food?

The first distinctive pattern derived from the narratives reveals that food appeared to take on a disproportionally important and dominant role in life. The essence of this theme is captured in a statement by Anna: 'I think about food pretty much all day. My life, my mind revolves around food. I don't think I will ever stop loving food'. The following subthemes were organised in a way to explore potential sources for this strong preoccupation.

If I see food, my eyes open. The experience of overwhelming pleasure and excitement around food was discussed, which was often unconnected to physical hunger. As Anna explained 'I don't even need to be hungry. If I see food in front of me, my eyes absolutely open'. As they were aware of their 'obsession' with food, both Louise and Anna consciously tried to replace this with healthier alternative behaviours to 'try to get away from using food as something to look forward to'. Louise reported engaging in regular boxing classes, which she found created a comparable pleasurable and rewarding experience to eating. Meanwhile, Anna and Tom researched and prepared healthier food alternatives to her favourite unhealthy treats.

Feeling in control. Rigid self-monitoring practices, either in the form of specific diets or calorie counting, were employed to maintain strict control over food choices. Stephanie explained, 'I set the goal calories to 1,600, but as soon as I hit 1,200, I start to feel really anxious about eating more'. While Anna and Louise were primarily hoping to lose weight, Stephanie additionally used food as a way to structure her life and occupy herself. She explained that doing this helped her achieve positive self-image, and provided a sense of 'control where there is not much else to control', and also relieved anxiety over making food-related decisions. For Jane, being in control over her gluten intolerance was her main motivation to monitor her diet. She was only able to control her fears over eating by consuming liquid shakes or by eating in the company of others to distract herself. In many instances, the rigidity of pursued eating patterns had a detrimental effect on social life. Louise and Stephanie admitted missing out on social events and outings to avoid deviating from their food schedule as they feared that restaurants were unable to accommodate their dietary requirements. To better cope with the burden of strictly monitoring their diet, Louise, Jane, and

Table 2. Overview of the themes identified through thematic analysis.

OVERARCHING THEME	SUBTHEMES	EXAMPLE QUOTE
Why am I all about food?	If I see food, my eyes open	*'I love food, for me it's excitement. I don't even need to be hungry. If I see food in front of me, my eyes absolutely open'.*
	Feeling in control	*'If I am able to control something unhealthy, then I have achieved something'.*
	Pursuit of a positive body image	*'I've always had distorted views of my body and I've never felt comfortable about the way I look. […] I have always used food as a way not to think about my body'.*
Jekyll and Hyde	It's taking over like an addiction	*'It's almost like a need to have food, to have it in my hands and to stuff myself. I am like a food monster! I just gobble it down'.*
	I'm doing this to be healthier	*'I remember the positive things to why I am doing that, I actually try and lessen the pleasure of it, by trying to think 'I have eaten it, it was nice, but was it worth it?'*
Emotional attachment to food	I just want the comfort of food	*'Generally when I am stressed or sad, I will eat more because food can be comforting – it's like a companion. I would almost call it my best friend'.*
	Food brings people together	*'Growing up, barbecues were something that I remember enjoying very much, so having a big backyard with my parents inviting lots of people and playing games'.*
	Food is fuel	*'Your body needs fuel – so just like with a car, if you don't put gas in, it's not gonna, you know, work for you'*

Anna incorporated 'forbidden foods' in moderation, as Anna elaborated: 'Being 100% only pure, clean eating … I could do it for a while, but I would go back into the bad old habits'.

Pursuit of a positive body image. This subtheme captures an eminent pursuit of achieving a particular body shape by eating healthily or restricting food intake. In many instances, external cues appeared to be more relevant than physical hunger signal (eg, 'healthy' ingredients equal weight loss). Several narratives demonstrate a general sensitivity to the societal perception of their body weight, especially within their closer network. Stephanie elaborated, 'Somebody very close to me told me "You have enough fat to survive the winter without eating" and that really hurt my feelings'. The prevalent social pressure was emphasised by a reoccurring for comparisons against others who were seen as slimmer or fitter, which often triggered negative self-beliefs and emotions. As Anna explained, 'It's hard when being with people who can eat and eat, and just don't know the struggles that probably people like me who gain weight quite easily'. She discussed how coming to terms with her body shape was a journey she pursued; however, she was unsure of whether she would ever be able to overcome her obsession comparing herself with others. In alignment with the desire to improve their body shape, some participants reported following certain role models. For example, Louise felt motivated by various people, a celebrity, who had recently lost weight: 'This inspires me to think "If she can do it, then I can do it"'.

Jekyll and Hyde

This theme describes a constant balancing act between maintaining healthy eating habits and giving in to appetite cues or cravings. Participants tended to experience this as an internal conflict between good and evil.

It's taking over like an addiction. Despite constant efforts to practice healthy eating and portion control, some admitted struggling with overeating, which tended to be accompanied by lack of control, and resembled typical symptoms of binge eating episodes. Louise elaborated, 'That feeling of guilt doesn't come in before. All the negative things about food don't seem to … get pushed aside'. She recognised the harmful nature of this behaviour by drawing parallels to substance addiction: 'I think it's really quite a dangerous thing […] because you are using it in a way that basically is drug abuse'. Giving in to overeating was often followed by negative feelings, as it represented a major deviation from participants' ideals and values of 'eating right', symbolising failure in achieving a personally important goal. The negative impact on the self-image becomes clear as participants used negative personality traits to describe themselves in this context, for example, greed or impulsivity, highlighted in Anna's narratives: 'I am the greediest person in the world. So every food I see – I am like a food monster, I just gobble it down'. Despite repeated efforts, some felt that they were unable to control their urge to overeat entirely: 'I feel the more times you try to not eat something, the more … it takes practice' (Louise).

I'm doing this to be healthier. Multiple coping strategies were used to control the urge to give in to food cravings. Reported strategies included avoiding triggers and specific ways to deal with the aftermath of a food binge. Mentioned examples of trigger avoidance were preparing healthy meals, abstaining from social events that involved unhealthy foods, and attending exercise classes, as this would lead to the release of endorphins in a similar way to food. In addition, Louise imagined positive future outcomes of maintaining healthy eating habits, and on the other hand, the consequences of weight gain: 'I remember the positive things to why I am doing that, I actually try and lessen the pleasure of it, by trying to think 'I have eaten it, it was nice, but was it worth it? Probably not". Stephanie attempted to distract herself by occupying herself with cognitively engaging activities. On the contrary, Anna scheduled a 'cheat day', where she allowed herself to indulge in any food, with the aim of having the willpower to 'stay on track' during her diet regimen. To deal with the aftermath of overeating, Tom and Stephanie adopted compensatory measures the following day by eating less than usual and going to the gym to burn off the excess calories.

Food is fuel. Taking on a more rational approach of food serving physical survival served as a coping mechanism for Jane who described how she had internalised 'food is fuel' like a mantra with the aim of detaching from her negative thoughts about food.

Emotional attachment to food

The third prominent theme encapsulates how participants attribute eating behaviours to feelings and mood states. A quote by Anna captures the essence of this theme: 'I eat although my body doesn't require it or need it, either for a sense of happiness or whatever emotions it might bring up'. In contrast to this emotional attachment, Charlie expressed an overly rational approach towards food. This is captured in the following quote: 'At the end of the day your body needs fuel – so just like with a car, if you don't put gas in, it's not going to, you know, work for you'.

I just want the comfort of food. Anna and Tom described eating more in response to negative emotions, for example, when they felt sad or lonely. For Anna, food appeared to offer her emotional support similar to a close friend, suggesting an unusually close bond: 'Food can be comforting. It's like a companion almost, especially when you are living alone it is right there'. Her positive sensations outweighed the anticipated negative consequences at that moment ('I don't want to think, or to know … I just want to eat and have the comfort of food'.).

Food brings people together. Tom mentioned a strong internalisation of explicit ceremonies and societal rituals being associated with specific meals, such as cakes for weddings or birthdays, and barbecues on summer parties: 'Growing up that was something that I remember enjoying very much, so hopefully that will continue to be passed on from generation to generation'.

Discussion

The insights derived from the interviews revealed meaningful food-related thought patterns. People's individual relationship with food appeared to be emotionally charged across participants, while other participants expressed a more rational approach in a food-related context. This observation is supported by a robust body of evidence, which has established a heightened tendency for individuals who are obese to overeat in response to emotions compared with lower weight categories.[3,6,13,14] This suggests the importance of emphasising the role of emotions equally to thinking styles to understand people's relationship with food and underlying processes explaining individual eating behaviours.

Dichotomous thinking and categorising food items into good or bad foods were commonly reported by several study participants, which has been reflected in previous research with women displaying a higher tendency for these thought patterns.[15] The meal environment appeared to be extremely important of how people thought and felt. Having company particularly served as a pleasant distraction from negative thoughts around food. This link has been documented in a previous study that found that social distraction at food intake can facilitate eating bigger portion sizes as the ability to self-monitor is impaired.[16] Several participants spoke of adopting coping mechanisms in the context of distressing food-related thoughts and emotions, including positive self-talk, adopting a rational approach to food by seeking knowledge about nutrition, avoiding situations that trigger overeating, and reframing negative thoughts into positive ones. Some of these strategies have been previously identified as useful in the context of managing food-related concerns, including seeking nutritional knowledge,[17] positive self-talk,[18] and positive reframing.[19,20]

Food represented a reward for attaining a particular goal for some participants, which further supports their positive valence of food and may stem from associative learning mechanisms, which is known to influence food choices.[21] For example, positive memories and nostalgic feelings automatically emerged when 1 respondent shared particular societal food rituals, which likely stems from the social bond over sharing food with relevant others. Moreover, some participants reported having reoccurring binge eating episodes, which were reportedly triggered by availability of food, stress, or boredom, both negative and positive emotions and personality traits, for example, impulsivity. Recent evidence, including a systematic review, has listed these cues as contributors to overeating and higher body weight.[22,23] Moreover, the addictive nature of food was discussed in promoting overeating, which has been documented in previous studies.[23,24]

Some of the coping strategies described here to prevent impulsive overeating and improved self-efficacy for resisting against food cravings provide potential directions for effective weight loss interventions. Some of these strategies have

previously been identified in the context of maladaptive eating behaviours, including the mental self-projection to pre-experience future events of current eating styles.[25] An example from the current study involves watching documentaries with obesity case studies to envision long-term consequences of severe weight gain. Problem-solving skills were described to be effective in Slyter[20] and Murphy et al[26] and were described during interviews, for example, avoiding eating alone to avoid the presence of negative thoughts and seeking a social environment for distraction.

Finally, others found alternative rewarding activities helpful to distract themselves from ruminating about eating, for example, distracting themselves with cognitive demanding and engaging activities such as homework and games or taking part in enjoyable group exercise classes such as boxing. Baer et al[27] attributed the effectiveness of this strategy due to its mechanism of action of creating feelings of mastery and pleasure. In practical implications of these findings, it can be concluded that current clinical practice may consider a shift from the general focus on dietary behaviours to a greater emphasis on psychological cognitive strategies to reduce maladaptive thought patterns and difficult emotions linked to weight gain. Mindfulness-based interventions, particularly Acceptance Commitment Therapy (ACT), have been suggested for people with a problematic relationship and history with food engaging in chronic dieting, binge eating, and body shape concerns.[20,28] Furthermore, ACT may be helpful for developing helpful coping strategies to deal with food cravings for people at risk of weight gain, who typically suppress their food-related thoughts to escape the experienced intrusion and distress that they evoke.[29] In addition, the concept of intuitive eating may be a promising gateway for women to help normalise the identified maladaptive and self-sabotaging eating patterns triggered by negative body image and dieting attempts, as this practice focusses on dietary intake based on internal cues of hunger and fullness, as well as body acceptance. Such programmes have demonstrated improvements in dietary restraint, restrictive dieting, physical activity, body satisfaction, and drive for thinness.[30] Combining cognitive-behavioural therapy with acceptance-based methods potentially is another desirable way for addressing maladaptive thoughts and emotions around food, as it enables the integration of tools to modulate moods targeting an improved adaptive reactivity to emotional distress.

AUTHOR CONTRIBUTIONS

Helena Wehling carried out this study under the supervision of Joanne Lusher. The first draft of this manuscript was created by Joanne Lusher from the original doctoral thesis that was written by Helena Wehling. Further edits were carried out jointly by both authors of this manuscript.

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