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Feeling good about being hungry: food-related thoughts in eating disorder

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Abstract

Objectives: This study explores the relationships to food and hunger in women living with anorexic type eating difficulties and asks how imagery-based elaborations of food and eating thoughts are involved in their eating restraint, and recovery. **Design**: The qualitative idiographic approach of Interpretative Phenomenological Analysis (IPA) was used. Four in-depth semi-structured interviews were conducted with women self-selected as having experienced anorexia or anorexic like behaviour. **Methods**: The data was analysed using IPA and an audit of the analysis was conducted to ensure that the process followed had been systematic and rigorous and appropriately considered reflexivity. **Results**: Hunger was perceived positively by participants as confirmation that they were achieving their goal of losing weight, or avoiding weight gain. Hunger conferred a sense of being in control for the participants. Intrusive thoughts about food were reported as being quickly followed by elaborative mental imagery of the positive aspects of weight loss, and the negative consequences of eating. Imagery appeared to serve to maintain anorexic behaviours rather than to motivate food seeking. However, negative imagery of the consequences of anorexia were also described as supporting recovery. **Conclusions**: The finding that physiological sensations of hunger were experienced as positive confirmation of maintaining control has potentially important clinical and theoretical implications. It suggests further attention needs to be focused upon how changes in cognitive elaboration, involving mental imagery, are components of the psychological changes in the development of, maintenance of, and recovery from, anorexia.

Keywords:

Mental Imagery; UK; Eating Disorder; Anorexia Nervosa, Craving; Hunger; Intrusive thoughts; Interpretative Phenomenological Analysis

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Introduction

'Eating disorders' are complex phenomenon which at the simplest level have been defined as a disturbance of eating habits or/and weight control behaviour, resulting in a significant impairment of physical health or/and psychosocial functioning (American Psychiatric Association: APA, 2007). Anorexia nervosa (AN) is the least common but most debilitating eating disorder, resulting in one of the highest death rates for any psychological condition, with mortality rates estimated to be between 2-8% (Herzog et al., 2000). A persistent drive for thinness, refusal to maintain a minimal body weight for the individuals shape and height, an intense fear of gaining weight and an abnormal preoccupation with food and body image, characterise AN. Restrictive eating has been associated with the a psychological desire for control (Slade, 1982). Other cognitive processes reported to be associated with the maintenance of AN include unhelpful beliefs about food and body shape, which tend to be reinforced through the results of weight loss (Vitousek, 1996).

Several cognitive models aim to explain the development and maintenance of AN, and maladaptive learning (Garner & Bemis, 1982), distorted cognitions (Guidano & Liotti, 1983) and the need for control (Fairburn, Shafran, & Cooper, 1999) form part of the major theoretical perspectives. The most basic approach views eating disorders in general as learned behaviours: continued weight loss provides a sense of mastery, achievement and self-control, maintained through the fear of weight gain by dieting and exercise (Garner & Bemis, 1982).

Cognitive distortions form the core psychopathology of AN (Vitousek, Watson & Wilson, 1998). Individuals living with AN resist powerful physiological

cues to eat, which in others would lead to cravings for food, and yet little is known about their experience of hunger and craving. An exploration of such phenomena is crucial in informing theory and in understanding the cognitive processes involved in the maintenance of AN, which might be targeted in psychological therapy.

The Elaborative Intrusion (EI) theory of desire (Kavanagh, Andrade, & May, 2005) has an evidence base in other disorders involving craving, such as alcoholism (Kavanagh, May, & Andrade, 2009), smoking (May, Andrade, Pannabokke & Kavanagh, 2010), and has also been applied to food cravings (Harvey, Kemps & Tiggemann, 2005; Kemps & Tiggemann, 2007). It describes the cognitive processes occurring during a craving episode and their emotional impact. Apparently spontaneous intrusive thoughts, triggered through environmental cues or the individual's physiological or motivational state can trigger these episodes. Subsequent cognitive elaboration includes retrieval of episodic memories of consumption of the desired substance, expectations about consumption, and plans for acquiring the substance. Of particular importance to EI theory is mental imagery, which has an affective component that means craving is at its strongest when it involves sensory elaborations of the target and of consumption. It is suggested that these images simulate the desired activity and so are initially pleasurable, but they also exacerbate awareness of deficit, encouraging the individual to seek out the target of their desire. Self-report data (May et al., 2004; May, et al. 2008; Tiggemann & Kemps, 2005), and findings from studies using secondary tasks to disrupt imagery (May et al., 2010; Harvey, Kemps, & Tiggemann, 2005; Versland & Rosenberg, 2007), support the involvement of mental imagery in craving.

The EI theory suggests that motivational states such as hunger or thirst can act as precursors to situations in which craving could occur. Indeed, food cravings do occur in the majority of the general population (Lafay et al., 2001) and hunger and thirst are associated with increased availability of memory representations related to eating, drinking (Aarts, Dijksterhuis & De Vries, 2001), and increased intrusive thoughts (Berry, Andrade, & May, 2007). It is also known that dieting increases the occurrence of food cravings (Gendall, Joyce, & Sullivan, 1997) and causes preoccupying thoughts about food (Green, 2001). However, in AN cognitive elaborations associated with hunger are some how resisted or modified and this poses a potential problem for EI theory that warrants exploration.

Qualitative studies exploring how individuals with AN perceive and manage their attitudes towards food and hunger are limited and those that do exist have focussed more generally on the experience of having the condition or receiving treatment (e.g. Rich, 2006; Offord, Turner, & Cooper, 2006).

Little research has specifically explored how sufferers maintain their AN behaviour and their attitudes toward food and hunger in the face of cues that would normally lead to craving. The aims of this study therefore, are to explore how women with AN perceive and manage their condition, and focus in particular on how they manage hunger. Several qualitative methodological approaches could be used to achieve this aim (Harper & Thompson, 2012). The current study used IPA (Smith & Osborn, 2003) because it is an approach that focuses, in detail, on the lived experience and the meaning of that experience to the participants involved, but also acknowledges that there is also a process of interpretation on the part of the researcher involved. IPA is idiographic in nature and therefore purposively looks at accounts derived from small numbers of participants, typically between

three to six (Brocki & Wearden, 2006; De Visser & Smith, 2006; Smith, Flowers & Larkin 2009, p.51; Thompson, Smith & Larkin, 2011). Offord, Turner and Cooper (2006) have already investigated inpatient views of treatment using IPA and Mulveen and Hepworth (2006) have also used this approach to explore six individual's experiences of participation in pro-anorexia websites. Therefore, the use of IPA in the proposed study facilitates comparison with this emerging body of work.

Method

Participants

Ethical approval from The University of Sheffield's ethics committee was obtained before the study was conducted. The intention was to recruit a purposive sample using criteria relevant to the research question, rather than necessarily being representative of the whole population of women living with AN (Biggerstaff & Thompson, 2008). A homogenous sample was sought that met the inclusion criteria of being self or clinically diagnosed as having currently or recently experienced AN. Participants were four women between 19 and 26 years of age. Three of the participants had a history of clinical AN but were in the early stages of recovery, one participant was self-diagnosed. Two participants were recruited through an eating disorders support group and two participants were postgraduate students.

Data collection

A semi-structured interview schedule was designed for the study in accordance with the recommendations of Smith et al. (1999). Open-ended questions were asked about the women's experiences of AN, and particularly focused on their accounts of their experience of food and hunger. Interviews were audio taped with consent and took place in a private room within the University. The first author interviewed all participants. She was at the time of collecting the data a twenty-three year old female with a personal history of AN, which was not disclosed to the participants but was discussed in supervision in relation to the reflective diary that was kept to facilitate reflexivity.

Data analysis and Interpretation

Transcribed interviews were analysed following a number of steps outlined by Smith et al. (1999) and followed a dynamic and recurring process. Each transcript was read several times by the first author to identify the ideas and meanings behind the words expressed by the participants. Notes were taken and then further re-reading occurred, and preliminary themes were identified. Through constant comparison and analytic re-reading, preliminary themes were modified and structured hierarchically. Themes were then arranged into meaningful clusters and this process was repeated a number of times as new themes emerged and others were excluded. A final set of super-ordinate themes and subthemes representing the participant's experiences and understandings were produced.

Reflexivity is an important process in qualitative research (Secrest & Thomas, 1999). To address this issue, the first author kept a researcher diary

noting anything that she felt may have influenced or impacted the interpretation of the participant's accounts during the analysis process. This was then explored in supervision with the second author to discuss how it was influencing the emerging analysis and conduct of the study. This included discussion of both personal and theoretical influences.

Results

Analysis of the four interviews produced four super-ordinate themes and eight subthemes, summarised in Table 1.

INSERT TABLE 1 HERE

These will be discussed in detail below and illustrated with representative quotes (the names of the participants have been altered). The quotes used are symbolic of the themes that emerged during the analysis. For emphasis, sections of these quotes that indicate the elaboration of thoughts, often involving sensory imagery, have been italicised.

Fragile sense of recovery

Confusion around their past eating behaviour was significant for most participants and this contributed to a sense of recovery being fragile. This fragility was related to continued fears about gaining weight. This was related to participants feeling a loss of control relating to their eating habits and having unrealistic expectations and beliefs about gaining weight.

Fears associated with food and weight gain

> "they say a moment on the lips, a life time on the hips and it's true [laugh]." (Kate)

Most participants believed that everything they ate would contribute to weight gain, but also described these beliefs as unhelpful. One of the most difficult aspects to come to terms with for some participants was the fact that eating food doesn't necessarily mean that they would put on weight. This quote from Mary who was in the process of recovering from anorexia accurately describes this sub-theme:

> "I've kind of always got a morbid fear that it's gonna go straight to my thighs or whatever... I know from past experience that it won't, so, but that fear's never really left me" (Mary).

Here her concern is expressed in concrete terms in relation to an immediate effect upon her body. Food seemed associated with weight gain and fatness and so some participants were confused about what recovery meant:

> "The association I had was if I ate, then I'd turn into this overweight obese person. If I didn't then I'd be alright 'cos I could maintain this sort of, my weight..." (Karen).

Again, she expresses the concern in terms of the effect of food upon her body. Jennifer also had unrealistic expectations about food and eating:

> "I thought that everything I ate I would put on weight and when I was first recovering obviously I had to, did, put on weight" (Jennifer).

All of these quotes indicate that the very though of food and eating is associated with an immediate thought about the effect upon one's body. Rather than thinking about the taste or pleasure to be obtained from food, they think about the negative consequences of eating. Karen says:

> "I associated food with bad and making me fat … all I could imagine was like me turning into this kind of *big roly poly person with like rippling fat and it was, it would be just like wobbling* and I just wouldn't be able to show my face and people wouldn't want to be friends with me cos I was fat and all this stuff – so I just imagined, the association I had was if I ate, then I'd turn into this overweight obese person." (Karen)

In this extract, Karen is giving a very vivid, visually-based, description of the negative consequences for her body (italicised section). In contrast, the physiological cues that are part of hunger come to take on positive aspects. Mary describes how the sensation of hunger is taken as evidence of achieving the desired outcome of being thin. She demonstrates recognition that her fear of weight gain is unrealistic but clearly describes it as continuing to have potency. For Mary, this fear of weight gain is related to a sense that she might lose control if she was to eat "normally":

> "If I start eating normally again, you know, even more normal than what I'm doing now, like, chips and burgers and stuff, where will it stop?" (Mary).

Fears about gaining weight were strongly evident in the participant's accounts of their eating behaviour and are commonly acknowledged as a core aspect of the phenomenology of anorexia. What we found here was that the ability

to maintain control over eating behaviours reinforced feelings of achievement and self-worth. Therefore, self-esteem appeared to rise as sensations of hunger occurred:

> "I tend to feel good if I'm hungry. I did read somewhere that it's about control and I do think that's what it's about with me. I like the sense I can actually control what I'm doing. So when I feel hungry, I think 'great, I'm able to withstand this' " (Kate).

> "…when I was ill I enjoyed being hungry, like it was a good thing… it means that you're [pause] winning or whatever, because you're losing more weight and you're not eating, so, just because having that feeling, you know that you do need to eat but you're not, so you're the one in control" (Jennifer).

> "I associated food with bad and making me fat so that's why I didn't eat very much and my weight plummeted," (Karen)

Importantly, positive associations with losing weight seem to be described as being reinforced through the feelings of control the participants stated they experienced when hungry. This implies that physiological cravings for food are experienced positively, because of a more salient psychological desire to avoid gaining weight.

Other evidence of negative associations or elaborations of thoughts about food came from a comment by Karen:

> "I've got this phobia of being sick so *I associated eating with being sick*… I started associating food with illness and that's what, that's why I

> didn't. That's why my attitudes towards food changed, I just saw it as something that would make me ill, so I wouldn't eat it" (Karen)

For Karen, food and vomiting were inextricably linked in her mind (italicised), and became part of a social phobia about being sick in public.

Awareness of disorder

Crucially, those participants who were recovering from the disorder acknowledged their attitudes were different from other people:

> "I do see it as different from other people" (Jennifer).

Others however, saw their experiences as normal:

> "I was talking to the lady downstairs in the coffee lounge about needing chocolate and I was saying how much I craved it and she said she didn't. I said 'Don't you ever crave anything?' and she said 'No'. I said 'Not even when you're stressed?' and when pushed she said 'a peanut butter sandwich, when pushed' [laugh]" (Kate)

Although Kate acknowledged that she relies on chocolate to reduce her anxieties she did not consider this dependence abnormal. It seems the participants' perceptions of their difficulties with food are modified throughout the course of their disorder; appearing normal during the severe stages of their illness to being irrational when the decision to change is implemented.

However, during the severe stages of some of the participant's illnesses, a distorted sense of body image often exacerbated the condition, as described by Karen below:

> "I *saw myself as different as I actually was: I'd look in the mirror and I'd look at all the different parts of me* which were, which I thought were, a bit fatter than they should have been" (Karen).

The italicised section indicates that Karen is reporting a visually based memory of an activity she engaged in while restricting her diet. Although the activity itself involved direct sensory experience, the fact that she continues to recall the activity in recovery suggests that visual imagery of her body as 'fatter than they should have been' supported her restricted eating.

Reasons for change

The physical implications of the disorder encouraged some participants to change their behaviours. Loss of functionality was particularly important to some in motivating change:

> "I couldn't do some things when I was quite ill, like I couldn't walk very far or couldn't really write and so, there were quite a lot of physical things" (Jennifer).

> "I had to stay in bed for like a year it just made me really, it just slowed me down, and one day I thought this is just so lonely, I just hate being on my own, just being in bed, and being so weak, because I wasn't eating properly… I just had to fix myself, so I just gradually, I suppose, I just started eating properly" (Karen).

For others, perceived changes in appearance were important motivating change. Mary described a memory of a turning-point experience, when she realised the effects that restricting her eating was having upon her appearance. As

with Karen's memory of checking her body in the mirror, Mary is clearly recalling the visual aspects of this experience (italicised section):

> "I looked at myself in the mirror and I smiled and *I saw my cheeks were like really hollow and stuff* and I thought 'oh my god that looks really bad' " (Mary).

Considerations of the future implications were also described as having an impact on participants in making a conscious decision to change. This was often also linked to functioning and to appearance:

> "Talking to my doctor and stuff about osteoporosis because, you know my periods never came back and I'm worried that I will end up bowed over or whatever. So that is another factor that gets me" (Mary).

Relationships with food

This theme describes how the participants felt about food, hunger and eating and how they manage their experiences during the course of their illness. Despite being at different stages of their illness at the time of interview, all expressed difficulties towards food and eating. Jennifer, talking about her reactions to feeling hungry, said:

> "I suppose, sometimes, I think 'oh it's good I feel hungry' and sometimes I think 'oh no, I don't want to go back'…. In the past I thought that everything I ate I would put on weight …when I was being ill I enjoyed being hungry, like it was a good thing" (Jennifer)

but when reflecting upon her feelings in recovery she described how she dwelt less upon thoughts about eating (italicised section):

> "I still think the same way, I just deal with it better… *I think I spend less time now thinking about it* than I used to. If I know I'm going to eat I don't worry about it, whereas before I would have done" (Jennifer)

Jennifer is aware of the changes that have come about in her relationship with food, as her thoughts about it have moved from a focus upon the negative consequences of eating and the positive aspects of being hungry. Intrusive thoughts about eating would sometimes interfere with other tasks (italicised section) and have emotional consequences:

> "I do get quite stressed about it and I would think about it for the rest of the day and worry about it. Emm, depending what I'm doing really. Emm, but [pause] *I definitely can't concentrate as well, not just because I haven't eaten but because I'm thinking about it*. Thinking about…yeah, panicking about it." (Jennifer)

> "when it comes to doing work… I can do it if I've had chocolate whereas I can't if I haven't because I can't focus on my work. When I know it's in the cupboard, I'm thinking about it, I literally can't concentrate." (Kate)

In contrast to Jennifer, Kate has separated eating to satisfy hunger from eating to quell the physical sensations that come from under-eating:

> "I find I need to eat things like biscuits, chocolate, crisps to be able to work in the first place, and that's my stomach churning that causes that… My stomach will really churn when I'm anxious, so it's like it needs something more to work on, but yeah that isn't freedom. That's like being forced to eat." (Kate)

She has relabelled what would be cues for hunger as something else in order to accept eating, but is still unhappy about being 'forced to eat' by her body. She has developed a strategy to avoid eating:

> "I find that, and other people don't tend to, smelling food, smelling chocolate really helps me. Smelling something I want to eat *I can imagine eating it*. A lot of people say 'how can you do that' but I think how can you not do that, it really helps me…. If I've got the smell there, it's almost like I'm eating it." (Kate)

For Kate, the smell of chocolate allows her to imagine eating it (italicised section), and this is satisfying as actually eating, without any of the negative consequences. When she does crave food, her sensory imagery is very powerful (italicised section):

> "I don't feel hunger but *I can taste it when I'm craving it* and I really want it. The bad, the negative aspects of it are tiny, where as when I've had it, they're huge. That is really quite amazing." (Kate)

She is also aware that her cravings are exacerbated by negative emotional states:

> "I could say that after a week of not eating chocolate my craving won't be as bad, but if I encounter something stressful, it sodding will. It will be just as violent, and I say violent meaning violent." (Kate)

Ambivalence

Conflicting beliefs about food, hunger and eating produced ambivalent attitudes. Food and eating was associated with negative feelings because it signified a loss of control, and was associated with anxiety and guilt about gaining

weight; and yet because it was a forbidden thing it could be offered to oneself as an occasional reward:

> "I would say I've got a pretty good relationship [with food]; Even though I would say I'm fully recovered from the issues I had when I was, when I was a bit younger, I still can't help but look at how much fat is in food, I sort of do it automatically" (Karen).

> "Well I like food. I see it as something good and it certainly is a good stimulus if that's what you mean. If I want to reward myself then I'll give myself food, but equally, if I eat a big meal then I'll feel really bad" (Kate).

These quotes demonstrate the emotional ambivalence surrounding food and eating for the participants. Emotions of guilt, anxiety and loss of control associated with eating conflicting with the aspiration to get well, preserved and reinforced negative attitudes.

> "the only time I'm not obsessing about it is when I'm letting myself go free but even then I'm thinking 'Oh, should I eat this cake'. I can't do that for a long enough time. I'm always thinking, 'Ooh should I have this cake, ooh I'd like that cake.' " (Kate)

Restrictive eating and guilt were evident in all participants:

> "I do eat a lot of fruit and veg. I'm just not content with just buying a big bag of pasta and a big bag, big bottle of sauce and living off that all week, because it's, like, high in carbs" (Mary).

Development of feeling ill

Life experiences and distorted cognitions about body image contributed to the development of disordered eating for all participants.

Life experiences

For some, difficulties with food and eating were a consequence of stressful life events:

> "I think when it first really started to, you know, affect how I was thinking, was about midway through my A-levels" (Mary).

Feeling out of control in relation to life experiences also contributed to the women's distorted attitudes towards food and eating. The quote below is from Mary who felt the physical changes of sexual maturity made her feel out of control and she restricted her diet because of the instant confirmation of self-control:

> "I've been very conscious of the size of my butt and my thighs… because I was also the oldest one out of all of my sisters I was of course developing before all of them so – I wouldn't say there was a pressure to try to be skinny but I didn't like the fact that my body was going haywire, while theirs was still, like, perfectly juvenile or whatever" (Mary).

Similarly, Jennifer described how her anorexia was a result of feeling out of control with her life and this was the reason for her subsequent relapse following recovery:

> "Everything wasn't perfect and I thought I'd feel better again if I did it, kind of did it again. And so it was not really being happy with everything else, not just weight but everything" (Jennifer).

For others, it was a specific event that triggered off the illness:

> "when I was twelve and my, aunts, one my aunts, we stayed at her house, me and my sister, and she said to me 'Aw, you're quite a lot plumper than your sister aren't you, you're a bit more chubby' " (Karen).

Karen describes how distorted cognitions about body image resulted from her aunt's comments and this, as well as the pressures of reaching sexual maturity reinforced her negative self-image. As a result, Karen restricted her diet to prevent weight gain. For all the participants, difficulties with eating were a consequence of malformed beliefs about body image and this is described in more detail under the sub-theme perceived body image.

Perceived body image

A negative body image was an influential factor in the development of the women's difficulties with eating:

> "I've never been happy with the size of my thighs, even when I was that low, so yeah, I've just tried to come to terms with the fact that, you know, I do have distorted ways of thinking about my body, so I'm never going to be satisfied whatever" (Mary).

Mary acknowledges the fact that her beliefs about her body image are distorted, irrational and counterproductive and she still experiences difficulties with self-acceptance. For other participants, it was the underlying issues associated with their illness that contributed to the development of a negative body image and

restrictive eating. Karen described how comments from a family member made her sub-consciously obsess about her body and have anxiety about gaining weight, including a visually based analogy for her appearance (italicised section):

> "The fact that she said that, that's what I always remember and then that made me think 'Oh, I can't be chubby, I can't be fat, 'cos I'm only little anyway, you know, in height and *I'll just look like a big barrel* if I eat lots of food and I'll just get, and I'll just look worse, 'cos I'm only short' and that's when I started not eating" (Karen).

Dissatisfaction with body image encouraged compensatory behaviours in all participants. The physical and emotional effects of these feelings will be discussed in more detail in the subsequent theme.

Emotional and physical consequences of illness

Restrictive eating produced a number of different physical and emotional impairments.

Physical effects of illness

The quotes below are from Karen who describes the effects of anorexia:

> "I had to stay in bed for, like, a year because I got so ill, I suppose. I mean I had glandular fever and stuff like that. I was a rake but all the other issues that you get from, like, being underweight, things like that, like – it just stops you from growing properly, you get ill all the time. I didn't realise how bad it was affecting me" (Karen).

Karen describes how she was oblivious to the consequences of anorexia throughout the severe stages of her disorder. Her desire to lose weight and maintain her thinness meant she overlooked the effects of her behaviours.

Emotional consequences of illness

Psychological and emotional consequences were also associated with disordered eating. Jennifer described how during recovery food dominated her thoughts:

> "Like, that's all I ever thought about, and that was for, about [long pause], about well, a year and that was literally all I thought about" (Jennifer).

Although the consequences of restrictive dieting proved detrimental to some of the participant's lives, it enabled them to realise the extent of their illness and encouraged attitude change and contemplation of recovery. Without this, some of the participants may have continued in the downward spiral of self-starvation.

Discussion

Distorted cognitions about food (1a) and body weight (1b, 3b), and stressful life experiences (3a) characterised the individual's accounts of their AN. Consistent with previous research, (Slade, 1982; Garner & Bemis, 1982; Fairburn, Shafran & Cooper, 1999) these participants' extreme attitudes towards food developed during adolescence and in response to stressful life experiences (3a), where the extent of control over their lives was challenged. Constant vigilance over eating for fear of losing control was evident (1a). A fragile sense of recovery was evident, manifested in the need for control, fear of food and expectations.

Ambivalent attitudes towards anorexia were experienced (2a). Thoughts of food were elaborated negatively, because eating prevented weight loss (4a), and positively, because it was the key to recovery when the decision to change was implemented (1c). This is consistent with previous research whereby people using pro-anorexia websites described how their illness produced feelings of ambivalence about whether they, or the illness itself was in control of their behaviour, and ambivalence about whether they wanted to recover, or maintain their behaviour (Williams & Reid, 2010).

Attitudes towards hunger changed over the course of their illness from being positive (reflecting successful control and continued weight loss), to negative in terms of anxiety and fears about relapse (1, 4). All participants still held disordered beliefs about food and eating. Recognising the effects of anorexia (4) encouraged participants to contemplate change (1c) and subsequent recovery. This ambivalence is consistent with previous research (Prochaska, DiClemente, & Norcross, 1992; Cocker, Geller, & Linden, 2002).

Some participants claimed feelings of hunger initially produced feelings of self-control, and continuous dietary restriction reduced the sensations associated with hunger, maintaining their behaviour. Under normal circumstances, restrictive eating (and therefore a sense of deprivation) should produce intrusive thoughts, subsequent elaboration, and craving (Kavanagh et al., 2005). However, in anorexia this natural instinct is perverted. The feelings of hunger trigger positive thoughts about not eating, and are seen as rewarding; or are relabelled as ‘stomach churning’ and seen as a consequence of stress or anxiety rather than hunger. Any thoughts about food become negative, associated with immediate weight gain,

fatness, and loss of control. Seeing a food, our participants thought of the calories or grams of fat it contained, rather than any sensory pleasure.

Attempted suppression of thoughts increases their incidence, because through merely trying to suppress such thoughts they are made more cognitively accessible (Wegner, Schneider, Carter, & White, 1987; Salkovskis & Reynolds, 1994). Attempted suppression of appetite targets produces obsessional thinking, and evidence indicates that similar brain structures are activated in people with cravings as in OCD (Ciccopippo, 1999; Grant, London, Newlin, Villemagne, Lui, X, Contoreggi. et al., 1996; Volkow & Fowler, 2000). Desire-related thoughts can be suppressed through the diversion of attention away from the craved substance (Juliano & Brandon, 1998) and from this study it seems that in AN a similar strategy may be adopted for coping with hunger so as to avoid the need to eat. The desire for thinness and to have control could alter the elaboration process following intrusive thoughts about food. Obsessional thinking, normally characterised by the attempted suppression of desire-related thoughts, is manifested in a preoccupation with body image and the need for control. This allows individuals with AN to divert their attention away from food, towards their negative associations with food and eating (fear of gaining weight, loss of control, guilt and anxiety) and it is these thoughts that are elaborated on by salient information from memory. Thus, intrusive thoughts of food do occur, but are quickly followed by cognitive elaborations that serve to maintain anorexic behaviours, turning a thought about eating into one about not eating. The implication of this argument is that, if AN sufferers could be encouraged to elaborate positive associations with food following intrusive thoughts, rather than elaborating the negative consequences, feelings of hunger, cravings for food and in

course, the restitution of normal attitudes toward food and eating could be regained. Alternatively, using acceptance based methods such as techniques like mindfulness training (Segal, Williams, & Teasdale, 2002) to help people ignore intrusive thoughts about food could help break the cycle of elaborating the negative consequences of eating.

This study has limitations. The participants were at different stages of recovery, and the participants were self-selected rather than being referred by health practitioners (although three reported having been clinically diagnosed). This means that we had no access to any clinical information, such as diagnostic criteria, length of illness or number of relapses. Furthermore, to keep the interview situation as non-threatening as possible, we did not attempt to measure BMI or weight. As a qualitative study, the findings are inevitably preliminary and require further, quantitative confirmation, to provide reassurance that the themes are not created by memory biases or expectations about the appropriate things to say.

In conclusion, to our knowledge this study is the first to explore how patients manage their reactions to hunger, and how they cope with physiological cues that in others trigger cravings for food. The findings confirm previous research that stressful life experiences, the need for control, and preoccupations about food and body image are common features of the disorder. In addition, whereas restrictive eating would normally produce feelings of craving, these feelings are seemingly replaced by a desire for control and thinness. Consequently, the physiological and psychological effects of deprivation do not have their normal impact on behaviour. Clearly, interventions are needed that specifically challenge the positive perception of hunger and the negative perceptions of eating. Whilst many cognitive behaviour therapy interventions already consider such areas for cognitive restructuring,

consideration of the cognitive processes involved in normal craving could be added into therapeutic intervention for anorexia, for example, the sensory nature of an individual's associations with food or eating cues. Further studies are required to verify these findings with clinical populations and with male sufferers.

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Table 1. Four themes and eight subthemes derived from the analysis of the interviews.

(1) Fragile sense of recovery:

1a. fears associated with food and weight gain

1b. awareness of disorder

1c. reasons for change

(2) Relationship with food

2a. ambivalence

(3) Development of feeling ill

3a. life experiences

3b. perceived body image

(4) Emotional and physical consequences of illness

4a. physical effects of illness

4b. emotional consequences of illness.