Emotional Eating: Implications for Research and Practice in Elite Sports Contexts

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Abstract

Due to the physical and aesthetic demands of sport, elite athletes must pay meticulous attention to functional eating, with emphasis on adequate and nutritionally appropriate food. However, it is increasingly recognised that food may also be consumed in response to emotions, known as emotional eating (Macht & Simons, 2011). In the context of elite sport, emotional eating may compromise functional eating goals, as the use of food to regulate emotions is associated with a failure to maintain weight management goals (Elfhag & Rössner, 2005). In this chapter, having first set the nutrition and performance context of elite sport, we examine emotional eating and its role in emotion regulation. We then present applied recommendations intended to help athletes and coaches manage unhelpful emotional eating. We conclude by summarising the implications for research and practice.

Theoretical Considerations

The nutritional strategies of athletes are of importance in maximising training adaptations, reducing the risk of injury and illness, and enhancing competitive performance (Beck, Thomson, Swift, & Von Hurst, 2015). Elite athletes may partake in sports that require a high power-to-weight ratio, place aesthetic demands on the body, and/or are weight-sensitive or weight-classified (Sundgot-Borgen et al., 2013). However, few athletes naturally possess the anthropometric requirements for these types of competitive sports. The issue that this presents is that adherence to dietary recommendations and safe weight management practices is challenging for some athletes, even those with dietary programmes tailored to meet their needs (Reale, Slater, & Burke, 2017).

Key to athlete's experiences of food is the perception of food as fuel. Elite athletes must maintain *functional eating*, with emphasis on adequate and nutritionally appropriate food. As many individuals start their career as high-performance athletes during childhood or adolescence, an emphasis on functional eating starts at this point. This is of significance as excessive control over children's eating behaviour is associated with poor long-term outcomes with regards to their food intake and weight status. For example, in the long-term, pressuring the consumption of more fruits and vegetables among children is actually associated with them eating less fruit and vegetables (Fisher, Mitchell, Smiciklas-Wright, & Birch, 2002). Indeed, research suggests that at any age, a highly controlled diet can (1) give rise to food cravings and (2) inhibit intuitive eating behaviours that are based on physiological cues of hunger and satiety, both of which may lead to an increased calorie intake and poor nutritional food choices. Within this chapter, the implications of food cravings will be described in the context of initiating eating, specifically emotional eating, whilst intuitive eating will be described in the context of developing interventions intended to manage unhelpful emotional eating.

Food cravings are an intense urge to consume a specific food, directed towards a sensory (such as emotion) rather than a nutritional need (Shiffman, 2000). In adults, cravings are a leading cause of dieting failure and correlate with poor nutritional self-regulation and overconsumption (Meule, Lutz, Vögele, & Kübler, 2012). There are two key characteristics of elite sport that present the possibility of food cravings for participants. First, elite athletes are discouraged from eating certain foods during their training and competitive season. Thus, they may experience urges and cravings for these prohibited foods, particularly if feeling deprived. Second, elite sport is associated with intense emotional experiences (Lane, Devonport, Stanley, & Beedie, 2016), and as such, throughout an athlete's career the potential for emotionally elicited cravings is high. Food cravings resulting from emotions rather than hunger are known as *emotional eating* (Macht & Simons, 2011). Whilst there is no published work examining emotional eating in the sporting context, other performance conditions such as examinations have been found to elicit emotional eating (Macht, Haupt, & Ellgring, 2005).

Emotional eating to serve the function of emotional regulation rather than addressing a physiological need is commonplace and has been evidenced among child and adolescent populations (e.g., Nguyan-Rodriguez, Unger, & Spruijt-Metz, 2009). Indeed, eating when experiencing unpleasant emotions is a socially encouraged behaviour, as from an early age, friends or family may offer food to comfort their loved ones, with the food types offered tending to be high in fat and/or sugar. Use of the term 'comfort food' is commonplace in Western culture, inferring the anticipated influence that food can have on emotional states. Emotional eating is usually associated with sugary and high fat foods such as sweet baked items and savoury pasties, pizza (e.g., Konttinen, Mannisto, Sarlio-Lahteenkorva, Silventoinen, & Haukkata, 2010). These foods are normally restricted in an athlete's diet. Whilst the study of emotional eating has typically been among female samples, the *presence*

of emotional eating does not differ between female and male adolescents, with a suggestion that males eat in response to confused mood and females in response to stress, worries, and anxiety (Nguyan-Rodriguez et al., 2009).

Theory and research on emotional eating commonly focusses on overweight and obese populations, and is geared towards understanding the aetiology of obesity, and binge eating disorder. However, evidence of eating to regulate emotions in overweight and normal weight populations (Devonport, Nicholls, & Fullerton, 2017) indicates that emotional eating behaviour is an important consideration across the continuum. In an elite sport context, deviation from a carefully planned nutritional intake plan may carry consequences for mindset and performance, both in training and competition. Thus, some key propositions derived from theories on emotional eating in obesity are transferable to the athlete. For example, the psychosomatic theory of obesity introduced the notion that food is used as a coping mechanism in times of stress, which, in turn, leads to obesity (Kaplan & Kaplan, 1957), whereas those with more adaptive coping mechanisms do not eat in response to emotional distress (Faith, Allison, & Geliebter, 1997). Thinking of emotional eating as a coping mechanism provides a possible avenue for interventions, which can help people identify and implement alternative coping strategies to replace emotional eating.

Another early theory proposed that the onset and maintenance of obesity was due to using food to reduce anxiety (Kaplan & Kaplan, 1957). Collectively, many theories of emotional eating have since been developed following this trend, whereby food is consumed with the aim of self-regulating emotions, for example to improve negative mood (Thayer, 2001), mask stress (Polivy & Herman, 1999), and escape aversive self-awareness (Heatherton & Baumeister, 1991). Given the intense emotions that typify elite sport participation, consideration of how food might be used to regulate emotions is highly relevant.

The theory of restrained eating points to emotional eating as a consequence of intense dieting, known as restrained eating (Herman & Polivy, 1983). It has consistently been found that women engaging in restrained eating are more prone to emotional eating (Greeno & Wing, 1994). Restrained eating is characterised by restricting food intake with the goal of losing weight. The controlled eating experienced by the athlete is a very close approximation to restrained eating. Therefore, restraint theory can help us to understand why prohibiting certain foods and having a highly controlled diet for the athlete may bring about unwanted negative outcomes with regards to food intake. To begin, restrained eaters do not eat in response to physical cues, and one consequence of this, which we will return to in our recommendations, is a diminished awareness of hunger and fullness cues. A further salient outcome is 'counter-regulation', or over-eating, occurring in restrained eaters when their self-control processes are somehow undermined by eating a banned food, for example. They may experience the "what the hell" effect and abandon all attempts at dieting due to this singular violation that symbolises their failure to control their dietary intake. Overeating in restrained eaters can also occur when self-control processes are at a 'limited capacity' and can no longer function due to the mental resources required to process complex emotions, such as anxiety, taking priority and leaving little cognitive capacity to maintain control over eating (Boon, Stroebe, Schut, & Jansen, 1998). At these times, eating becomes disinhibited and food may be over consumed as a result. It follows that the more control required, the more readily this can be disrupted by other competing demands, and so the more vulnerable individuals are to over-eating.

Whilst for the athlete, the nature and exact definition of 'excessive eating' will be relative, their lifestyle exposes them to many stressful events, with a concurrent expectation to remain in tight control of their dietary intake. The limited capacity theory shows how athletes' cognitive capacity to achieve both regulation of emotions and of food intake could

push them beyond their limit and result in one or the other being regulated less effectively. In support, there is evidence to show that when individuals attempt to regulate their emotions, for example by suppressing an unwanted unpleasant emotion, this leads to higher food consumption (Evers, Marijn Stok, & de Ridder, 2010).

Eating in times of stress may be underpinned by confusion between internal arousal states and hunger, probably because of early learning experiences (Bruch, 1964). It therefore follows that the onset and maintenance of emotional eating can be expressed in terms of learning theory (Booth, 1994) in that the experience of an unpleasant emotion elicits classically conditioned responses (e.g., craving) followed by an operant eating response that is reinforced by a reduced intensity of the unpleasant emotion. Research has found that eating foods high in sugars or fats may be reinforced by a reduction in cortisol levels and the subsequent decrease in perceived stress post consumption (Konttinen et al., 2010). Further conditioning this response, individuals may also experience an increase in pleasant emotions following consumption of certain foods, particularly prohibited food types such as those high in fats or sugars (Singh, 2014), and this may trigger increased food intake through associative learning.

Whilst emotional eating can be functional and has a place in our coping repertoire, it may present as maladaptive should it evolve towards an automatic emotion-regulation strategy becoming habitual or indeed compulsive. When used in this way, emotional eating can create problems, and is associated with failure to maintain weight management goals (Elfhag & Rössner, 2005). As such, maladaptive emotional eating carries unwanted implications for elite athletes.

Applied Recommendations

Four interventions are recommended in seeking to manage dysfunctional emotional eating, maintaining *A) an emotional eating diary, B) intuitive eating, C) mindful eating, and D) urge surfing*.

Emotional Eating Diary

Identifying and recognising emotions that appear to elicit unhelpful eating behaviours presents a start point for emotional eating interventions. We recommend that athletes maintain an *emotional eating diary* over a minimum period of one-week using ecological momentary assessment. This involves the real time self-monitoring of emotions and eating behaviour (Shiffman, 2009). Specifically, athletes should note any emotions they are experiencing (if any) at the point they recognise a food craving. They should also note down what they want to eat, the extent to which they feel hungry, and whether the craving is acted upon (see Appendix A for an illustrative diary template). The information produced can be reviewed by the athlete to establish whether they experience emotionally elicited food cravings, and in particular cravings of food types (or quantities) not advocated within their dietary recommendations.

Having completed a food and mood diary, athletes should be more knowledgeable as to the extent of any emotional eating, and whether this requires management. Where emotional eating does appear to be unhelpful, athletes should then reflect upon the notion that emotional eating presents one of many possible emotion-focussed coping strategies (Macht & Simons, 2011). For example, in a study by Parkinson and Totterdell (1999), participants qualified emotional eating as a controlled (i.e., deliberate) affect-regulation strategy similar to other distraction-oriented behavioural strategies such as “doing enjoyable things” or “tidying up”. Athletes should be encouraged to consider strategies (other than emotional eating) they have previously used, or could use, to manage emotions as desired. By increasing an athlete’s

awareness of their experiences of emotion and emotion-focussed coping and broadening the range of emotion-focussed coping strategies available to them, they become better able to select the right coping strategy for use at the right time, leading to desirable outcomes. As such, undertaking ecological momentary assessment in this way presents an intervention in itself as it can help identify areas of need, supports the generalisation of emotion regulation skills learned previously, and informs the selection and application of further intervention as appropriate.

Intuitive Eating

Encouraging intuitive eating presents a second approach we propose to help manage dysfunctional emotional eating. *Intuitive eating* is characterised by food intake being led by physical hunger cues, in other words, eating when hungry and stopping when satisfied (Tylka, 2006). Intuitive eating has been associated with fewer disordered eating practices (Tylka, 2006). In the context of elite sport restricting the diet and classifying foods as forbidden is common (Reale, Slater, & Burke, 2017). Thus, intuitive eating practices can be disrupted, leading to less awareness of hunger and fullness in athletes. Through eating in response to physical cues, the reliance on other non-hunger cues such as emotions, food availability, and cravings can be mitigated to some extent.

Mindful Eating

Mindful eating presents a third strategy that may be used to support intuitive eating. Mindful eating is a skill that can be trained. Mindfulness based interventions aim to encourage "awareness of both internal and external triggers to eating, interrupt dysfunctional cycles of binging, self-recrimination and over-restraint, and re-engage the natural physiological processes of eating regulation" (Kristeller & Wolever, 2010, p. 52). Mindfulness is associated with adaptive eating behaviours, which are more intuitive. For example, mindful individuals consume smaller serving sizes of calorie-dense foods and see

less healthy foods as less appealing. It has been suggested that the greater self-control evidenced among more mindful individuals reduces impulsive eating in response to emotional stressors (Kristeller & Wolever, 2010).

The development of mindful eating involves bringing full attention to the process of eating, to taste, smells, thoughts, and feelings that arise during a meal, as well as internal cues of hunger and fullness. To practice mindful eating, individuals should be encouraged to slow down when eating, take time to savour and enjoy their food, and eat away from distractions (such as the television, mobile phone, or internet), so that they can really focus on noticing food and changes to their body in response to eating. Noticing food and flavours can be encouraged at any time, even when the diet is being highly controlled. By encouraging athletes to be mindful of their food and bodies, intuitive eating can be reinforced, so that when the control is lifted, athletes can continue to use this to guide their unrestricted eating.

Urge Surfing

As food cravings are common in those with highly controlled diets and are associated with poorer ability to maintain a healthy weight (e.g., Elfhag & Rössner, 2005), interventions for athletes should also target food craving, particularly at times when control over their diet is lifted. When reviewing interventions intended to manage cravings, there is evidence that ultra-brief interventions can be effective in reducing cravings among adults with chocolate cravings. Hulbert-Williams et al. (2017) used a third-wave technique called '*Urge Surfing*' to encourage acceptance of the unpleasant feeling that comes about when an individual does not act on a craving. In this technique, the individual is invited to experience an urge or craving (Hulbert-Williams et al. induced this urge through presenting chocolate to their participants). Following this, they are asked to 'sit with' the experience of the craving, noticing its intensity and the subtleties, until the urge passes. Their attention is drawn to the consequences of not following through on an urge (typically, these are not problematic), and the ease with which

an urge can pass over without the need to act on it. The intervention lasted 20 minutes and guided clients through the ebb and flow of unpleasant emotions. Although participants still reported having cravings at a one-week follow up, they did not act on them through eating the craved food. Critically, given the simplicity of this intervention, it was led by non-experts (undergraduate students), meaning this is an approach that coaches and nutritionists working with athletes could implement effectively.

Conclusions

Emotional eating is commonplace and starts from a young age. It can be adaptive in helping to manage emotions when used in moderation as part of a wider coping repertoire. However, when used excessively, it may compete with the functional eating goals of elite athletes. As such, we recommend that elite athletes engage in a period of self-reflection by keeping an emotional eating diary (Technique A) to examine their use of emotional eating, and to establish whether there is a need for interventions to help regulate emotional eating. If it appears that emotions elicit unhelpful eating behaviours, athletes should be encouraged and supported in increasing intuitive eating (Technique B), reinforced by a mindful eating approach (Technique C). During this time athletes should be encouraged to learn and interpret emotional cues for food cravings as well as physiological signals of hunger and satiety. In this way athletes can respond to these cues more effectively relative to their hedonic or functional goal. In managing food cravings resulting from emotional cues, the technique of urge surfing (Technique D) is recommended.

Regarding research recommendations, at this time, there is an absence of published work examining emotional eating among elite athletes. However, given the prevalence of emotional eating in general society, it is likely to be inherent in this population also. Sport is characterised by intense pleasant and unpleasant emotions that require regulation. As such, we advocate that future research should examine the role of pleasant *and* unpleasant emotions

as possible antecedents of eating among elite athletes. In examining this possibility, we further recommend that emotions in relation to food intake are examined using ecological momentary assessment, allowing the real time self-monitoring of thoughts, emotions and behaviour. This in turn will enhance our understanding of emotional eating as part of a wider range of emotion regulation strategies utilised by elite athletes.

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