

Emotional Eating: Feeding and Fearing Feelings - What Psychologists Need to Know

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Introduction

Internationally, diagnoses of overweight and obesity are growing in mass, with rates of obesity doubling in the last 30 years (World Health Organisation [WHO], 2014). According to a recent large-scale study of trends in adult body-mass index (BMI) in 200 countries from 1975-2014, including 19.2 million participants from 1698 population datasets, the numbers of individuals who are overweight or obese are rising globally, and statistical models project this trend to continue (Non-Communicable Disease [NCD] Risk Factor Collaboration, 2016). The study found that between 1975 and 2014, global age-standardised mean BMI increased from 21.7 kg/m² to 24.2 kg/m² (24.0-24.4) in men, and from 22.1 kg/m² (21.7-22.5), to 24.4 kg/m² (24.2-24.6) in women.

Along with this increase in obesity comes the increased risk of development of several chronic health conditions (WHO, 2015), thereby contributing to an increased risk of mortality. Despite the implications for health in the general population, obesity is preventable. Research reviewing the aetiology of obesity in recent years found behaviours central to diet and exercise to be pertinent aetiological factors (Martinez, 2000). However, several studies suggest that rising trends of obesity are more likely to result from increased rate of calorie consumption than decreased calorie expenditure (Swinburn, Sacks & Ravussin, 2009; Cutler, Bleich, Murray & Adams, 2008; Cutler, Glaeser & Shapiro, 2003). Eating behaviours surrounding choice, frequency and quantity of food consumed, are not causally determined by hunger alone (Canetti, Bachar & Berry, 2002). Indeed, eating behaviour is dependent on several variables, irrespective of physiological needs. Changes in eating behaviour in recent years (NCD Risk Factor Collaboration, 2016), suggests that factors related to disordered eating are more likely to be psychological and environmental than genetic or metabolic. Given the increasing prevalence of disordered eating and obesity, research is now seeking to understand these underlying variables.

Disordered eating behaviour has been found to be common in obese populations. This behaviour may play a powerful role in the increased risk of further weight gain and/or the success of weight loss programmes. Binge eating disorder (BED) and feelings of loss of control have previously been found to be the most common disordered eating issues reported in research findings (Pinto-Bastos, Ramalho, Conceição & Mitchell, 2016). However, other disordered eating behaviours also have been reported to contribute to the growing obesity problem, including emotional eating, night eating and grazing. It is generally acknowledged that eating behaviour is central to human emotion (Canetti et al., 2002). Previous research has explored the influence of emotions on eating behaviour. Findings suggest that excessive consumption of food is significantly increased in positive and negative affect states when compared to neutral affect arousal states (Patel & Schlundt, 2001). Therefore, eating behaviour in response to emotion is becoming an increasingly important concern for health professionals

To explore the literature on this topic we conducted a literature review. Web of Science, PsycInfo, Science Direct, PubMed and the Cochrane Library were searched (from database genesis to November, 2016) to identify papers relevant to the review. The search protocol comprised of keywords including 'emotion*', 'eat*', 'overweight' and 'obese*'. Titles, abstracts and full texts were screened to determine if results met the

study protocol criteria for inclusion. This search was supplemented by screening of reference lists for potential studies for inclusion. Here we present a review of findings and guidelines for health professionals working with overweight and obese adult populations who may be vulnerable to emotional eating behaviour.

Emotional Eating

The phenomenon of emotional eating is an abnormal response to affect negative emotional states, including anger, fear, or anxiety (van Strien & Ouwens, 2007). These emotional states are related to autonomic nervous system arousal, typically results in loss of appetite when the blood supply to the gastrointestinal tract is reduced (Carlson, 1916; Torres & Newson, 2007; van Strien et al., 2013). However, people who emotionally eat have been found to increase their consumption of food (Topham et al., 2011). In particular, emotionally eating has been related to an increased consumption of energy-dense foods (Nguyen-Michel, Unger & Spruijt-Metz 2007; Torres & Newson, 2007). Van Strien et al. (2013) recently found that high levels of emotional eating results in an increased consumption of sweet foods as opposed to savoury or salty foods. This study's findings were consistent with previous research findings (Oliver, Wardle, & Gibson, 2000; van Strien, Herman, Anschutz, Engels, & de Weerth, 2012).

Emotional eating increases an individual's tendency to consume more food than physiologically needed. Increased intake leads to increases in body mass index (BMI) scores and the probability of having a clinical diagnosis of being overweight or obese. Previous research suggested that emotional eating is a causal factor in the development of obesity in the general population (Robbins & Fray, 1980). Research has discussed how emotional eating leads to the development of overweight and obesity both in child and adult populations (van Strien, Herman & Verheijden, 2009; Torres & Newson, 2007). While elevated levels of emotional eating are associated with higher BMI (Goldbacher, La Grotte, Komaroff, Vander Veur & Foster, 2016; Nolan, Halperin & Geliebter, 2010), emotional eating is also prevalent in populations with healthy BMIs (Geliebter & Aversa, 2003; Fischer et al., 2007; Allison & Heska, 1993). However, the phenomenon has been widely reported among obese populations (Nolan et al., 2010).

Theoretical Models of Emotional Eating

Previous research emphasises the role of emotion in clinical eating disorders. Polivy and Herman (2002) suggested that emotion is a central moderator of disordered eating behaviour. Several theories have been put forward to explain the underpinning psychological mechanisms behind the functional and biological maladaptive tendency to eat excessively in emotionally arousing situations. The concept of emotional eating derived from Kaplan and Kaplan's (1957) psychosomatic theory of obesity. This theory suggested that obesity stems from a pattern of behaviour where excessive consumption of food is used as a psychological defence when a person experiences negative affect. However, Bruch (1973) suggested that emotional eating is the result of a confusion between internal arousal states and hunger, which may develop from early learning experiences. Alternatively, Heatherton and Baumeister (1991) suggested that emotional eating is part of an attempt to avoid negative self-awareness. In this model, individuals shift focus from meaningful

experiences of negative internal states and cognition towards eating. An earlier theory suggested that a psychological mechanism which underpins emotional eating is the desire and effort to increase and maintain the experience of positive emotional states (Lehman & Rodin, 1989). This theory supports biological theories which suggested that consumption of high sugar and fat comfort foods reduce the stress response activities of the hypothalamic-pituitary-adrenal axis, by activating the reward centres of the brain. This theory has been further developed by researchers who have taken a psycho-biological theoretical perspective of emotional eating which argue that the phenomenon is reward based (Adam & Epel, 2007). This perspective accounts for the recurring nature of emotional eating.

Affect regulation theories have primarily focused on clinical populations in the exploration of emotional eating behaviour, however, these models have not been tested extensively, and fail to address the causality of the phenomenon in the general population (McCullough et al., 2003). A systematic review of affect regulation theoretical models in obesity found negative emotions to be triggers for overeating, however, the samples analysed were heterogeneous and too small to validate any conclusions (Leehr et al., 2015).

Affect phobia is a recently developed model which addresses how compulsive behaviours and defences are employed to regulate distress (McCullough et al., 2003). This model has recently received support in explaining the phenomenon of emotional eating behaviour (Finnegan, Egan & Gibbons, 2014). These authors investigated psychological factors associated with emotional eating and BMI in an online cross-sectional study with non-clinical adults (N = 573). The researchers used a structural equation model which indicated that the model is a good fit for the theoretical understanding of emotional eating.

The affect phobia model is a combination of psychodynamic and learning theory. It suggests that negative attitudes towards emotion and expression of emotion originate from an invalidating family environment where emotion and its expression are actively discouraged or ignored. Eating can then become a defence which replaces the need to consciously assert the experience and expression of emotion (Haslam, Arcelus, Farrow & Meyer, 2012; Meyer, Leung, Barry & De Feo, 2010). The model posits that this maladaptive eating behaviour may be used to distract from the experience of negative affect and that defensive eating (emotional eating) may then alleviate these feelings by providing comfort to the individual (Haedt-Matt & Keel, 2011). The model has been supported by its explanation in Malan's (1979) triangles of conflict and person, which represents "the universal principle of psychodynamic psychotherapy" (p. 80), which is that defences and anxieties can inhibit the expression of emotions. A later affect regulation model, the schematic propositional analogical associative representation system (SPAARS) model supports this theory. The SPAARS model emphasises the role of psychosocial factors in childhood in the development of maladaptive eating behaviours (Fox & Power, 2009). Affect regulation and inhibition models of emotional eating emphasise that childhood emotional environments that negate expression of emotions result in these emotions becoming dissociated from the self. These negative emotions are then regulated or inhibited through disordered eating behaviours.

Each of the theories reviewed assumes that emotional eating results from maladaptive emotional regulation, therefore, this assumption

has fundamental implications for the treatment of emotional eating. If emotional eating is associated with a lack of adaptive regulation of emotion strategies to regulate negative affect, interventions need to be developed to target emotional eating in vulnerable populations (Evers, Stok & de Ridder, 2010).

Attitude to Emotional Expression and Emotional Eating

When a child's environmental needs are not met, or treated by carers as important, the child may then develop a negative attitude to emotions and their expression when they arise. The developmental causes of negative attitudes towards emotional expression have not been studied extensively. Research indicates that an invalidation of emotional needs in the childhood environment may contribute to the development of negative attitudes to emotion and emotional expression in child and adult populations (Topham et al., 2011; Finnegan et al., 2014). The literature states that this may arise from a discordance between the emotional needs of the child and the response from key attachment figures. It is suggested that emotions perceived as negative may be ignored or negatively regarded and that perhaps emotions perceived as positive may be positively regarded and encouraged. Alternatively, the childhood environment may encourage a culture of non-expression of emotion (Corstorphine, Mountford, Tomlinson, Waller, & Meyer, 2007). In each case, the childhood environment may contribute towards the development of negative attitudes to emotional expression, which may disrupt the cognitive processing of emotional information, leading to impaired ability to regulate emotion (Joseph, Williams, Irwing & Cammock, 1994).

Haslam et al. (2012) explored the relationship between invalidating childhood environments and eating pathology, mediated by attitudes towards emotional expression in a non-clinical sample of women (N = 200). In line with previous research, the study found that the invalidation of emotions in the childhood environment was significantly linked with pathological eating behaviours and that negative attitudes to emotional expression related to higher levels of eating concern (Ford, Waller & Mountford, 2011; Espeset, Gulliksen, Nordbø, Skårderud & Holte, 2012). Most significantly, the belief that the expression of emotion is "a sign of weakness" specifically mediated the relationship between the childhood environment and eating pathology (Haslam et al., 2012, p. 510).

Meyer et al. (2010) had similar findings in a study which explored emotional eating and eating pathology in a non-clinical sample of young women (N = 89). The study found that negative attitudes to emotional expression were linked to higher self-reported eating concern, and body weight and shape concern. In particular, beliefs that emotions should always be kept under control, and that expressing emotion was a sign of weakness, and fears surrounding the consequences of expressing emotions were linked with high eating pathology. Similarly, Finnegan et al. (2014) found that parental validation of a child's emotional needs influenced the development of attitudes towards emotional expression. This study found that childhood attitudes towards emotional expression were carried into adulthood and that a negative attitude to emotional expression modulated emotional eating behaviour in a large online non-clinical adult population.

However, these studies have several limitations, in that they tended

to explore this phenomenon among non-clinical female samples, thereby limiting the generalisability of the findings to clinical cohorts. Methodological issues also arise using cross-sectional and retrospective designs whereby causality cannot be assumed. In addition, these studies findings require replication in clinical samples and longitudinal research designs. Despite these limitations, the literature highlights the importance of challenging negative attitudes to emotional expression and the development of adaptive emotion regulation strategies in populations with elevated levels of eating pathology.

Mindfulness and Emotional Eating

Mindfulness is understood to be a state of non-judgmental awareness to the immediate experience of the here and now, and an acceptance of present experience (Bishop et al., 2004). The practice of mindfulness is becoming increasingly incorporated into interventions which aim to treat disordered eating (Katterman, Kleinman, Hood, Nackers, & Corsica, 2014). Several treatments for emotional eating have been developed (Seidell, de Beer & Kuijpers, 2008). Interventions aim to challenge a person's willingness to confront negative affect (Hayes, Villatte, Levin & Hildebrandt, 2011). The conceptual rationale used to explore the phenomenon of mindfulness has been reviewed by several authors in the treatment of disordered eating behaviour, in particular, BED (Baer, Fischer & Huss, 2005; Kristeller, Baer & Wolever, 2006; Kristeller & Wolever, 2010; Godfrey et al., 2015). Each review highlighted that mindfulness-based interventions cultivated the awareness of a person's internal processes including changes in emotion and physical sensations. The research highlighted that mindfulness may help facilitate compassion, acceptance, forgiveness and cognitive flexibility, thereby increasing the ability to cope adaptively to affect and increasing awareness of attitudes to emotional expression. A recent study found that mindful observation modulates the link between motivational states and traits on eating behaviour in response to appetitive stimuli (Papies, Pronk, Keesman & Barsalou, 2015). A review of empirical studies investigating the effects of mindfulness on psychological health (Keng, Smoski & Robins, 2011) found that mindfulness has several positive psychological effects, including a more positive perception of subjective wellbeing. The review highlights a reduction in psychological symptoms, automatic reactivity and an enhancement of behavioural regulation.

A systematic review investigating the efficacy of mindfulness as an intervention for emotional eating, binge eating and weight change (Katterman et al., 2014) highlighted the effectiveness of mindfulness meditation in reducing emotional eating behaviour across a variety of samples. However, the review found equivocal evidence for the effectiveness of the ability of mindfulness meditation in affecting body weight. In addition, this review did not examine the relationship between a person's state mindfulness and bodyweight. Despite the positive results reported in randomised controlled trials of mindfulness-based interventions, a recent study found that the proportion of mindfulness-based intervention trials with significant results may overstate what would occur in practice (Coronado-Montoya et al., 2016). Further longitudinal research is needed to determine the efficacy of mindfulness meditation on body weight and eating behaviour. Comparative effectiveness research is also needed to determine the efficacy of interventions to clinical populations.

Trait Mindfulness and Emotion Regulation

A person's mindfulness skills can be increased through mindfulness practices, meditation or mindfulness-based techniques (Carmody & Baer, 2008). Individual differences in levels of mindfulness prior to exposure to mindfulness techniques have been reported (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006; Thompson & Waltz, 2007; Cordon & Finney, 2008). A recent in the perspective of the literature now proposes that mindfulness may be an inherent or dispositional trait (Brown, Ryan & Creswell, 2007).

A review of the research indicates a strong correlation between self-reported trait mindfulness and psychological health (Keng et al., 2011). This correlation has been found among undergraduate students (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown & Ryan, 2003), non-clinical adults and clinical populations (Baer et al., 2004; Chadwick et al., 2008). A strength of this review paper was that studies operationalizing trait mindfulness were consistent across measures. The review suggests that higher levels of self-reported trait mindfulness were consistent with clinical measures of brain activity using functional neuroimaging. Higher trait mindfulness was linked with reduced bilateral amygdala activation and greater widespread prefrontal cortical activation during an affect labelling task. High trait mindfulness was inversely related to prefrontal cortex and right amygdala responses, indicating that higher trait mindfulness increases the ability to adaptively regulate emotional responses (Creswell, Way, Eisenberger & Lieberman, 2007). These findings were consistent with mindfulness research which found that greater trait mindfulness was related to a greater ability to process negative affect and negative thoughts about the self (Frewen, Evans, Maraj, Dozois & Partridge, 2008). This finding has important implications for physical health-related behaviours including emotional eating.

Trait Mindfulness and Body Weight

The literature has previously explored the relationship between trait mindfulness and weight status finding higher trait mindfulness to be inversely associated with weight gain, or lower BMI score (Liebman et al., 2003; Mantzios & Wilson, 2014; Camilleri, Méjean, Bellisle, Hercberg & Péneau, 2015). A recent study by Finnegan et al. (2014) found the observe subscale of the Kentucky Inventory of Mindfulness Skills (KIMS) scale (Baer et al., 2004) highly moderated levels of emotional eating and self-reported BMI. Mantzios, Wilson, Linnell and Morris (2015) had similar findings, where trait mindfulness was inversely related to weight gain in a study with male Greek military recruits. Interestingly, self-compassion was inversely related to weight gain. While this study used a small sample (N = 97), the study had the benefit of a controlled environment as all participants had the same choice of food and the same daily physical activity. These findings supported the role of mindfulness in weight management, as a critical area of focus for health professionals (Olson & Emery, 2015). Such research contributes to the growing body of evidence which now looks to consider positive psychological and cognitive factors in research on obesity and its contributing factors.

As well as research investigating the efficacy of mindfulness in weight management, several intervention studies have explored the effects of mindfulness in weight maintenance and weight loss. Timmerman and Brown (2012) conducted a six-week mindfulness-based intervention

to promote weight management in women. Daubenmier et al. (2011) carried out an exploratory randomised controlled study which found that mindfulness improved healthy eating behaviour and reduced cortisol awakening response, which may reduce abdominal fat over time, in a ten-week mindfulness-based intervention with an overweight and obese female population (N = 47). A systematic review of the literature (Olson & Emery, 2015) indicated that mindfulness-based interventions may facilitate increased weight loss in weight loss programmes. However, research has not examined how changes in trait mindfulness are psychologically, behaviourally and biologically responsible for weight loss. It is clear further research is needed.

While research on mindfulness in relation to weight management is a relatively new perspective, future studies should pay particular attention to the arguments made by Kaplan (1990) which argues that behaviour is the central outcome in health care. Further research is needed in the behavioural outcomes of trait mindfulness, and how it may play a role in health. In addition, very little is known about the underlying mechanisms of mindfulness as a concept. Research is needed to examine how the mechanisms behind trait mindfulness and change in mindfulness are psychologically, behaviourally and biologically responsible for body weight or BMI.

Conclusion

Obesity is a leading public health concern in Ireland (Department of Health, 2015). The diagnoses of overweight or obesity in the general population have risen significantly in the recent past. This supports the view that the aetiology of the disease may have environmental and psychological factors at play. The literature reveals that obesity to be a disease with some of its origins in behaviour. Clinical health psychology is increasingly concerned with eating behaviour in sub-clinical eating pathology. Recent research reviewed, suggests that emotion plays a key role in eating behaviour. Therefore, emotional eating is an important public health concern. Previous work has explored a number of factors associated with emotional eating and body weight. The literature has made links between attitude to emotional expression and emotional eating behaviour. Findings indicate that negative attitudes to emotional expression lead to higher emotional eating. Conversely, research suggests that high trait mindfulness regulates internal experiences of emotion. These constructs offer support for an affect phobia conceptualization of emotional eating. Recent findings highlight the influence of the childhood emotional environment in the development of attitudes towards emotional expression, emotional eating and body weight (Finnegan et al., 2014). The potential preventative role of mindfulness-based skills is emphasised to health professionals. However, a call for the development of large scale population based interventions are now imperative to treat this growing concern.

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Drawing Competition

In honour of the 11th Anniversary of the Psychological Society of Ireland's Student Affairs Group (PSI SAG), we are looking for primary school children's interpretations of psychology.

We are inviting children between the ages of 5 and 13 to create an image based on the title **When I grow up, I want to be a psychologist!**

Submissions will need to be accompanied by parental/guardian permission. If parents/guardians or teachers have any questions, please do not hesitate to contact us at studentaffairsgroup@gmail.com

Winners from each age group will be included in a special feature in a future issue of the *Irish Psychologist* magazine.

Please post your entries to:
**FAO: PSI SAG Drawing Competition,
The Psychological Society of Ireland,
Floor 2, Grantham House, Grantham Street,
Dublin 8, D08 W8HD.**

You may enter as many times as you wish.
Closing date for entries is **1 August 2017**.

Good luck! 😊