



Research report

Self-control and parental control mediate the relationship between negative emotions and emotional eating among adolescents



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ABSTRACT

Objectives: The study was conducted to simultaneously investigate the mediating effects of parental control and adolescents' self-control on the relationship between adolescents' negative emotions and emotional eating, and to determine pathways with the greatest effect among these variables. **Methods:** Negative emotions, emotional eating, parental control, and self-control were investigated in 594 high school students (average age = 16.70, $SD = 1.09$) in Changsha City, China. **Results:** High levels of negative emotions and parental control and low levels of self-control were strongly related to high levels of emotional eating in adolescents. In addition to the direct relationship between negative emotions and emotional eating, there was a mediating effect observed through low self-control and high parental control. The mediational effect of parental control was non-significant in adolescent boys. Furthermore, negative emotions related to emotional eating through the effect of parental control on adolescents' self-control. The degree to which both mediators explained the relationship between negative emotions and emotional eating ranged from 52.6% to 66.8%, and self-control had a stronger mediational effect than did parental control. **Conclusion:** The results indicate that both self-control and parental control should be considered in designing preventative measures against emotional eating in adolescents. Adolescent self-control training could also assist in preventing emotional eating.

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Introduction

Emotional eating is defined as “eating in response to a range of negative emotions . . . to cope with negative emotions” (Faith, Allison, & Geliebter, 1997, p. 439). Emotional eating in children causes excessive intake of food that is generally rich in fat and sugar, which results in increased body weight (Elfhag & Morey, 2008; Webber, Hill, Saxton, Van Jaarsveld, & Wardle, 2008). In addition, emotional eating is a risk factor for bulimia nervosa (Engelberg, Steiger, Gauvin, & Wonderlich, 2007) and an important predictor of binge eating in preadolescents and adults (Allen, Byrne, La Puma, McLean, & Davis, 2008). Meanwhile, studies related to unhealthy eating and emotional eating have suggested that adolescence is a critical period in the development of unhealthy eating behaviors and eating disorders (Striegel-Moore & Bulik, 2007).

Previous studies have found that emotional eating in adolescents is affected by *family environment*, including parental eating habits as well as parenting and feeding practices (de Lauzon-Guillain, Musher-Eizenman, Leporc, Holub, & Charles, 2009; Faith, Scanlon, Birch, Francis, & Sherry, 2004; Topham et al., 2011) and *personal*

factors, including stress level, stress coping styles, and personality (Elfhag & Morey, 2008; Larsen, van Strien, Eisenga, & Engels, 2006; Wallis & Hetherington, 2004). Few studies have examined possible mediators of the relationship between negative emotions and emotional eating. To our knowledge, one study has investigated the relationship between depression and emotional eating. This study used structural equation modeling and suggested that alexithymia and impulsivity might mediate this relationship (Ouwens, van Strien, & van Leeuwe, 2009). No studies have examined the potential mediators of family environment in this relationship. In addition, previous studies have insufficiently isolated the effects of potential mediators, and thus the relative importance of each mediator remains elusive.

In this study, we hypothesized that self-control and parental control might both be potential mediators in the relationship between negative emotions and emotional eating. Each of these potential mediators will be examined simultaneously to determine the most influential pathways.

Self-control and adolescent emotional eating

Self-control refers to the ability to override or alter one's inner responses, and involves consciously interrupting the stream of thought, altering emotions, and restraining undesirable impulses

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and impulsive behaviors (Tangney, Baumeister, & Boone, 2004). Blankstein and Polivy (1982) defined self-control as the ability to affect, regulate, and control one's emotional behaviors. Elfhag and Morey (2008) found that poor self-control was an important factor for eating due to negative emotions, suggesting that the inhibition of eating and difficulty in controlling eating behavior are crucial components of emotional eating. However, self-control was also affected by negative emotion. Davis and Claridge (1998) indicated that negative emotions might change individuals' appraisal of dietary maintenance, impair cognitive control of eating, and thereby enable the tendency to overeat.

Heatherton and Baumeister (1991) proposed escape theory which asserts that some individuals narrow their attention to the immediate stimulus environment (including emotional distress) to shift attention away from negative emotions. In accordance with escape theory, Ouwens et al. (2009) found that depression was indirectly associated with emotional eating through impulse regulation. Aside from emotional eating, escape theory has been applied to other phenomena such as excessive drinking, smoking, eating, and impulsive destructive behaviors.

Parental control and adolescent emotional eating

Parenting also plays an important role in children's emotions and behavior. Compared to parental warmth, the effect of parental control on child development is relatively unclear (Chen, Liu, & Li, 2000). Parental control includes interfering, demanding compliance, over-protection, and providing less affection (Favaretto, Torresani, & Zimmermann, 2001). Although several researchers have suggested that a certain level of control is beneficial for learning and maintaining appropriate behavior, some studies have indicated that parental high control was also significantly related to unhealthy behaviors in children (e.g., Barber, 1996; Maccoby & Martin, 1983).

Topham et al. (2011) suggested that it was important to study the relationship between family factors (e.g., parenting styles) and children's emotional eating to help us better understand the development of emotional awareness, impulse regulation, and responses to negative emotions in children. However, few studies have examined the role of parenting in children's emotional eating. Snoek, Engels, Janssens, and van Strien (2007) found that low maternal support, high psychological control, and high behavioral control were associated with increased emotional eating during childhood. They concluded that emotional eating might be a result of inadequate parenting. In addition, negative emotions are significantly related to parental control. For instance, Paulussen-Hoogbeem, Stams, Hermanns, and Peetsma (2007) found that higher negative emotions among children were associated with higher levels of parental restrictive control, characterized by power assertion, negativity, intrusiveness, hostility, over-controlling behavior, and/or over-involvement. Rubin, Stewart, and Chen (1995) also found that children's negative emotions (e.g., social fearfulness) might elicit restrictive control from their parents.

Based on these theories, we constructed a model in which self-control and parental control might both act as potential mediators of the relationship between negative emotion and emotional eating (Fig. 1). In addition, Finkenauer, Engels, and Baumeister (2005) found that parents can foster the development of certain aspects of their children's character in order to influence their emotions and behavior. For instance, parenting can indirectly influence adolescent emotional and behavioral problems through children's self-control. Thus, we constructed a second model that added a pathway from parental control to self-control (Fig. 2).

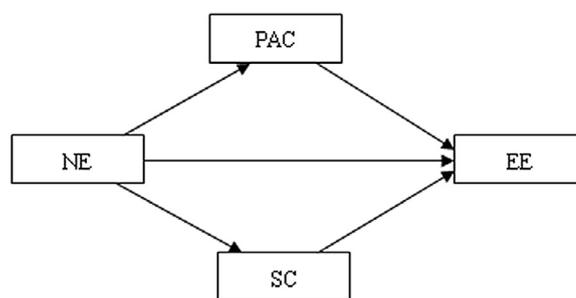


Fig. 1. Model 1.

Methods

Subjects

Participants were 594 tenth- and eleventh-grade students, of whom 258 were boys and 336 were girls. Their average age was 16.70 ($SD = 1.09$; age range 15–18). Body mass index (BMI) ranged from 16 to 29, with an average of 20.06 ($SD = 2.03$). Fifty-two participants were overweight/obese, and 542 were normal weight/lean. Socioeconomic status (SES) was determined by monthly family income (RMB) and divided into low (<2000), medium (2000–5000), and high (>5000) levels. In terms of SES, 39.4% of subjects were low, 44.9% of subjects were medium, 8.9% were high, and 6.8% were missing.

Procedures

Survey data collectors were trained together on data collection procedures and contending with challenges such as cleaning data and dealing with missing data. Immediately after being informed about the goal of the study, participants completed the Positive and Negative Affect Scale, Emotional Eating Scale, Parental Bonding Instrument (PBI), and the Self-Control Scale. Data on weight, height, and family income were also collected. The total time to complete all questionnaires was about 20–30 min. Surveys were collected immediately after they were completed. This study was approved by the ethical committee of Central South University, and all subjects provided written informed consent.

Measures

Emotional eating

The emotional eating scale (Arnou, Kenardy, & Agras, 1995) has been used to investigate eating behavior in response to negative emotions. We used the Chinese version of the Negative Emotional Eating subscale of the Emotional Eating Scale (Zhu, Cai, Chen, & Zhang, 2013), which contains three factors: eating in response to anxiety

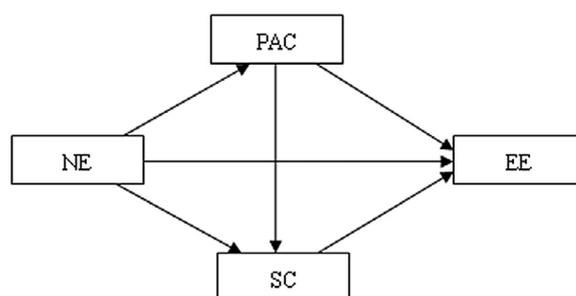


Fig. 2. Model 2.

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