



The role of shame in emotional eat



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ABSTRACT

Two studies were conducted to examine the role of shame in emotional eating. In the first study, 250 women (mean age: 29.95 ± 8.78 years; body mass index: 22.46 ± 5.76) reported their experiences of one negative self-conscious emotion (shame), two negative non-self-conscious emotions (anxiety, depression), and emotional eating. With anxiety and depression controlled for, shame predicted depressive, anxious, angry, and positive emotional eating. In the second study, negative non-self-conscious (anxiety) and self-conscious emotions (shame) were induced in participants. Five types of snack were used in the study. Emotional eating was measured by determining participants' binge impulse, actual food intake, and pleasure in eating the five types of snack. Ninety-one female participants were randomly assigned to either an anxiety-with-shame ($n = 45$; mean age: 22.46 ± 3.22 years; body mass index: 20.57 ± 5.42) or anxiety group (mean age: 21.89 ± 2.97 years; body mass index: 21.21 ± 5.58). Participants in the anxiety-with-shame group reported a greater binge impulse relative to those in the anxiety group. Actual food intake and pleasure in eating the five snacks did not differ significantly between the two groups. Implications of these findings were discussed.

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1. Introduction

Emotional eating refers to the impulse to eat following elicitation of negative emotion (Arnow, Kenardy, & Agras, 1995) and different negative emotions elicit emotional eating differently (Arnow et al., 1995; Macht, 1999). Emotional eating is closely related to overweight (Geliebter & Aversa, 2003). Previous studies have identified emotional eating as a widespread phenomenon, which exists on a continuum in both healthy people and those with eating disorders. Emotional eating could predict bingeing behavior in bulimia and anorexia nervosa and is related to restriction of eating in anorexia nervosa. Women with a strong tendency toward emotional eating are more likely to develop eating disorders (Engelberg, Steiger, Gauvin, & Wonderlich, 2007; Fioravanti et al., 2014).

Emotional eating is considered a learned behavior. Emotions are repeatedly matched to eating and become a trigger for the impulse to eat (Jansen, Havermans, & Nederkoorn, 2011). Fairburn, Cooper, and Shafran (2003) posited that emotion regulation maintains abnormal eating behavior. Some individuals use eating to downregulate negative emotions (Macht, Haupt, & Ellgring, 2005), which improve shortly after eating (Bongers, Jansen, Havermans, Roefs, & Nederkoorn, 2013; Gibson, 2006); therefore, emotional change negatively reinforces eating behaviors (Engelberg et al., 2007; Fioravanti et al., 2014), which worsen

over time (Bongers et al., 2013). Escape theory implies that when individuals experience negative emotions, they shift their focus to instant, concrete, physical stimulation by eating, and thoughts concerning emotions are avoided through relatively low self-awareness activities (Heatherton & Baumeister, 1991).

Numerous studies have examined the relationship between negative emotions and emotional eating. Emotional eating was positively associated with depressive symptoms (Kontinen, Männistö, Sarlio-Lähteenkorva, Silventoinen, & Haukkala, 2010), anxiety (Goossens, Braet, Van Vlierberghe, & Mels, 2009), and distress (Michels et al., 2012). However, these studies did not control for the effect of self-conscious emotions, which have been linked to emotional eating. For example, Wallis and Hetherington (2004) compared ego-threatening (high self-conscious) and non-ego-threatening (low self-conscious) tasks and found that the ego-threatening group ate a significantly larger amount of food relative to the non-ego-threatening group. van Strien, Ouwens, Engel, and de Weerth (2014) found that typical hunger reduction was absent in female participants following shame (self-conscious emotion) elicitation, indicating that self-conscious emotion could exert a unique effect on emotional eating. Shame, guilt, embarrassment, and pride are typical self-conscious emotions (Lewis, 1992). This study focused on the effect of shame as a self-conscious emotion.

The relationship between shame and disordered eating behavior has been examined in numerous studies, some of which focused on the relationship between shame and emotional eating. Shame, which is important in eating disorders, is a self-conscious emotion involving negative self-evaluation and a desire to escape (Lewis, 1971; Lewis,

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1992; Scheff & Retzinger, 1991; Tangney, 1995). Eating disorder patients exhibit higher levels of typical shame behavior, bodily and eating-related shame, and shame traits relative to healthy individuals. Further, relative to healthy control groups, eating disorder recover groups report higher shame levels (Hayaki, Friedman, & Brownell, 2002; McKinley & Hyde, 1996; Noll & Fredrickson, 1998; Sweetingham & Waller, 2008). Liu (2015) found that when healthy women's shame was elicited, they ate a higher number of snacks relative to those whose shame was not elicited.

This study aimed to explore the role of shame in emotional eating. As anxiety always co-exist with shame and depression is closely related to shame (Gilbert, 1998, 2000), in order to better investigate the unique role of shame in emotional eating, anxiety and depression were controlled in the Study 1, and anxiety was used as comparison in Study 2. Study 1 used questionnaires to examine relationships between emotional eating and shame while controlling for anxiety and depression. We hypothesize that: anxiety will predict anxious emotional eating, and depression will predict depressive emotional eating. After controlling anxiety and depression, shame will still be a significant predictor for emotional eating.

Study 2 elicited participants' emotions in laboratory conditions, to measure actual food intake, binge impulse, and pleasure in eating five types of snack following emotion elicitation. Shame was elicited in the experimental group, while anxiety matching that elicited with shame in the shame-elicitation task was elicited in the control group. We hypothesize that after emotions are triggered, shame group participants will have stronger bingeing impulse, eat more and have more pleasure in eating.

2. Study 1

2.1. Method

2.1.1. Participants

Participants were 250 Chinese women recruited via the Internet, with advertisements posted on the Wechat's network website and Douban. Wechat is a cellphone chatting software with >549 million active users, 86.2% of them are between 18 to 36 years smart phone users, and Douban is a Chinese online community with >100 million subscribers, core group of subscribers are well-educated young Chinese. Participants' mean age, age range, and mean body mass index (BMI) score were 29.95 ± 8.78 years, 14–62 years, and 22.46 ± 5.76, respectively.

As the online survey system will require participants to fill all the blanks when submitting the survey, among the 250 Chinese female who had finished the survey, no outliers was found therefore no participants were excluded.

2.1.2. Questionnaires

2.1.2.1. Emotional eating. The 25-item Emotional Eating Scale (EES), developed by Arnow et al. (1995), was used to measure emotional eating behavior after varieties of negative emotions and contains

three subscales: anger/hostility, anxiety, and depression. The intensity of each emotional state affecting eating was measured using a five-point Likert scale ranging from 1 (*none*) to 5 (*strong*). The Chinese EES was developed by Zhu (2012) and includes an additional positive emotional eating subscale. The four subscales in the Chinese EES are as follows: depressive emotional eating (9 items), anxious emotional eating (4 items), angry emotional eating (5 items), and positive emotional eating (5 items). Cronbach's α for the four subscales were 0.92, 0.82, 0.89, 0.84, respectively, in this study.

2.1.2.2. Shame. Internalized shame was measured using the Internalized Shame Scale developed by Cook (1993), which originally consisted of 30 items including 24 and six measuring internalized shame and self-esteem, respectively. Only the internalized shame subscale was used in this study. Participants provided responses using a five-point Likert scale ranging from 0 (*never*) to 4 (*always*). Scores range from 0 to 96, with higher scores indicating greater internal shame experienced the preceding year. Cronbach's α for the internal shame subscale was 0.95 in this study.

2.1.2.3. Anxiety. Anxiety was evaluated using the Self-Rating Anxiety Scale developed by Zung (1971), which consists of 20 items (e.g., I feel afraid for no reason at all) rated on a four-point scale ranging from 1 (*some of the time*) to 4 (*most of the time*). Higher scores indicate anxiety of greater intensity in recent two weeks (Wang, Wang, & Ma, 1999). Cronbach's α for the scale was 0.82 in this study.

2.1.2.4. Depression. The Center for Epidemiologic Studies Depression Scale was developed by Radloff (1977) to evaluate depressive symptomatology in the general population and consists of 20 items reflecting six aspects of depressive symptomatology: depressive affect, guilt and worthlessness, helplessness and hopelessness, psychomotor retardation, appetite loss, and sleep problems. Participants indicate the frequency with which symptoms occurred in the preceding week (e.g., I was bothered by things that usually don't bother me). Participants provide responses using a four-point scale, ranging from 1 (*occasionally or none*, representing less than a day), to 4 (*most of the time or persistently*; representing 5–7 days). Scores range from 20 to 80, with higher scores indicating greater depressive symptom frequency (Wang et al., 1999). Cronbach's α for the scale was 0.85 in this study.

2.1.2.5. Demographic data. Sex, age, height, current weight, and ideal weight were reported by participants.

2.1.2.6. Procedure. Questionnaires were completed online. The study was approved by the Peking University Psychology Department Ethics Committee.

2.2. Results

Means, standard deviations, and correlations between variables are presented in Table 1.

Table 1
Means, SDs, and correlations between variables.

	<i>n</i>	Mean	<i>SD</i>	1	2	3	4	5	6	7
1. CES-D	250	31.44	10.62	1	0.32**	0.62**	0.29**	0.23**	0.22**	0.19**
2. SAS	250	42.83	9.95		1	0.42**	0.27**	0.22**	0.23**	0.04
3. ISS	250	51.93	18.81			1	0.41**	0.31**	0.28**	0.20**
4. Depressive emotional eating	250	2.44	1				1	0.64**	0.60**	0.17**
5. Anxious emotional eating	250	1.93	0.94					1	0.61**	0.28**
6. Angry emotional eating	250	1.98	1.02						1	0.42**
7. Positive emotional eating	250	3.05	0.92							1

CES-D: Center for Epidemiologic Studies Depression Scale; ISS: Internalized Shame Scale; SAS: Self-Rating Anxiety Scale.

** $p < 0.01$.

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