รายงานวิจัยฉบับสมบูรณ์

พฤติกรรมการรับประทานอาหารด้วยอารมณ์

ในวัยรุ่นสตรีชาวไทยที่กำลังลดน้ำหนัก

นางกุลยา พิสิษฐ์สังฆการ

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บทคัดย่อ

การวิจัยครั้งนี้จัดทำขึ้นเพื่อศึกษาปรากฏการณ์การรับประทานอาหารด้วยอารมณ์หรือการใช้อาหารในการรับมือกับอารมณ์ความรู้สึกที่เกิดขึ้นในสตรีวัยรุ่นชาวไทยที่กำลังลดน้ำหนัก โดยแบ่งออกเป็น 4 การวิจัยย่อยและมีผู้เข้าร่วมการวิจัยทั้งสิ้น 1,682 คน การวิจัยย่อยที่ 1 เป็นการเก็บข้อมูลเชิงปริมาณเพื่อแสดงให้เห็นว่าสตรีวัยรุ่นที่กำลังลดน้ำหนักมีความเสี่ยงต่อการรับประทานอาหารด้วยอารมณ์มากเป็นพิเศษเมื่อเทียบกับชายวัยรุ่น สตรีวัยผู้ใหญ่ตอนต้นและสตรีวัยรุ่นที่ไม่ได้กำลังลดน้ำหนัก การวิจัยย่อยที่ 2 เป็นการเก็บข้อมูลเชิงคุณภาพถึงธรรมชาติของการรับประทานอาหารด้วยอารมณ์ ผลลัพท์ที่ตามมาและลักษณะบุคลิกภาพของสตรีวัยรุ่นที่กำลังลดน้ำหนักซึ่งมีการรับประทานอาหารในลักษณะนี้ การวิจัยย่อยที่ 3 เป็นการเก็บข้อมูลเชิงปริมาณเพื่อศึกษาถึงปัจจัยที่ช่วยพยากรณ์การรับประทานอาหารด้วยอารมณ์ ผลการวิจัยย่อยนี้เป็นที่มาของการสร้างโมเดลเพื่อช่วยอธิบายความสัมพันธ์ของปัจจัยที่ช่วยพยากรณ์การรับประทานอาหารด้วยอารมณ์ในการวิจัยย่อยที่ 4 หลังจากนั้น เป็นการอภิปรายถึงทิศทางการศึกษาในอนาคตเกี่ยวกับการรับประทานอาหารด้วยอารมณ์

คำสำคัญ: การรับประทานอาหารด้วยอารมณ์ วัยรุ่นสตรีที่กำลังลดน้ำหนัก ความไม่พึงพอใจในรูปลักษณ์ การตระหนักถึงคุณค่าในตนเอง ดัชนีมวลกาย ความวิตกกังวลเกี่ยวกับรูปลักษณ์ การรับประทานอาหารตามสิ่งเร้าภายนอก

Abstract

The present paper illustrated initial attempts to understand the phenomenon of emotional eating, the use of eating in handling emotional states, in dieting Thai adolescent females. A set of four studies were conducted to shed light on this phenomenon in a total of 1,682 participants. In Study 1, initial quantitative studies were carried out to establish the vulnerability of dieting female adolescents to emotional eating in comparison to male adolescents, female young adults, and non-dieting female adolescents. Study 2 was conducted with an aim to elicit qualitative data regarding the nature of emotional eating, its psychological outcomes, and the profiles of dieting female adolescents who relied on this coping strategy. Study 3, data were elicited to examine the antecedents of emotional eating. All together, this led to the testing of the path model that helped explain the antecedents of emotional eating in Study 4. Directions for future studies in emotional eating were proposed.

Keywords: Emotional eating, dieting female adolescents, body image dissatisfaction, self-esteem, Body Mass Index, body preoccupation, external eating

Executive Summary

Emotional states can have major effects on us. Still, the way the individuals handle these states affects their outcomes a great deal. The present paper illustrated initial attempts to understand the phenomenon of emotional eating, the use of eating in handling emotional states, in dieting Thai adolescent females. A set of four studies were conducted to shed light on this phenomenon in a total of a thousand six-hundred and eighty-two participants . In Study 1, initial quantitative studies were carried out to investigate the vulnerability of dieting female adolescents to emotional eating in comparison to male adolescents, female young adults, and non-dieting female adolescents. A total of one thousand one hundred and seven participants participated in the study. Findings supported the higher vulnerability of dieting female adolescents to emotional eating and warranted the necessity of further studies that would shed light on a better understanding of the phenomenon in this sample. Hence, Study 2 was conducted with an aim to elicit qualitative data regarding the nature of emotional eating, its psychological outcomes, and the profiles of dieting female adolescents who relied on this coping strategy. Twenty-three dieting female adolescents participated in the study and attended five weekly interview sessions. During each week, the participants kept records of their eating behavior, emotional experiences, and events that they felt might have triggered emotional eating. Findings helped illustrate the nature of such eating and led to a testing of some of the variables that were hypothesized to predict emotional eating in Study 3. In this study, data were elicited from a hundred and ninety-six dieting female adolescents to examine the antecedents of emotional eating. Findings suggested that body image dissatisfaction and self-esteem predicted emotional eating in this sample. Interestingly, escape-avoidance coping strategies did not do so. Findings from this study led to the conceptualization and testing of the path model that helped explain

the antecedents of emotional eating in Study 4. In this study, date from three-hundred fifty-six dieting female adolescents were collected and this led to the conceptualization of the path model that suggested that emotional eating in the participants might be explained by their orientation toward external eating and their experience of helplessness. Body image dissatisfaction, which could be explained by the adolescents' BMI, orientation toward the use of their physical appearance as a basis of their self-worth or their orientation toward self-objectification, and their self-esteem, was associated with external eating. Implications and directions for both future studies and intervention programs for emotional eating were proposed.

Emotional Eating in Dieting Thai Female Adolescents

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Emotional states have major effects on eating behavior (Canetti, Bachar, & Berry, 2002). An increase in eating in the face of negative emotions or stressful life events, emotional eating, has often been reported (Ganley, 1989; Mehrabian, 1980). Despite a longstanding recognition of its occurrence, studies on the phenomenon of emotional eating remain limited, particularly in the Thai culture. In the present report, hence, an initial attempt to understand the phenomenon in dieting female adolescents who appear to be particularly vulnerable to the phenomenon will be presented. It is anticipated that this presentation will pave ways for further investigations that will shed light on the understanding of emotional eating in the Thai culture.

Emotional eating

The relationship between emotions and eating has always interested researchers of human behavior (Canetti et al., 2002). For many, certain emotions lead to emotional eating or an intake of food in response to emotional impulses despite no physiological needs. In general, emotional eating occurs episodically, not on a regular basis. Similarly, the eating was generally elicited by negative emotion, although with some exceptions when food is used to enhance positive emotion (Jackson & Hawkins, 1980). Emotional eating is usually carried out secretively and is characterized by the use of high-calorie or high-carbohydrate food (Ganley, 1989). Emotional eating has been found to happen most frequently when the individuals are alone, during their suppers or snack times, and when the meal is eaten at home (Baumeister et al., 1994).

Theories related to emotional eating

In addition to the general conditions mentioned above, past theorists have attempted to understand emotional eating and proposed theories that help explain the phenomenon. Such theories may be viewed as follows:

The psychosomatic theory

According to this first theory, emotional eating may be observed in individuals low in interoceptive awareness. That is individuals who are not well able to recognize whether they are hungry or satiated are likely to eat in response to any arousal states. Based on this theory, eating is used to reduce anxiety. Hence, those with emotional eating, particularly the obese individuals, eat in order to reduce emotional discomforts (Kaplan & Kaplan, 1957). While the mechanism by which eating do so is not completely understood, researchers generally explain that emotional eating develops through learning.

The Schachter's theory

Arguing against the psychosomatic hypothesis, Schachter et al. (1968) proposed instead that, while normal weight individuals might either decrease or increase their eating upon stress, obese individuals would not decrease their eating in this circumstance. In one of their initial studies, Schachter et al. (1968) found that, for normal weight participants, stress decreased eating among those who were hungry and had no effects on those not hungry, while overweight participants ate the same amount of food regardless of their psychological states. While subsequent research did not replicate Schachter et al.'s (1968) findings, the hypothesis helps advance the understanding of emotional eating in that it helps explain that individuals with emotional eating had some early experiences that interfered with their abilities to

differentiate hungers from other signals of discomforts that are irrelevant to food deprivation (Bruch, 1973).

The affect regulation theory

Along the same line as the psychosomatic hypothesis which associates emotional eating with emotional discomfort, the affect regulation hypothesis proposes that eating serves an affect-regulating function, particularly in reducing negative affect (Ganley, 1989; Meyer, Waller, & Waters, 1998). It is hypothesized that emotional eating functions as a negative reinforcer in reducing aversive states by temporarily ameliorating or numbing negative emotions, or distracting the individuals from aversive emotional states (Arnow et al., 1992; Heatherton & Baumeister, 1991; Polivy & Herman, 1993; Wiser & Telch, 1999). Subsequent findings support this hypothesis. Recently, Whiteside et al. (2006) provided an evident that emotional eating was used to cope with negative emotions particularly in individuals with a deficit of skills to functionally modulate negative moods and with difficulty identifying and making sense of emotional states.

The restraint eating theory

In this theory, the association is established between dietary restraint and emotional eating. In general, such restraint is defined as the intention to restrict food for the purposes of weight loss or maintenance (Polivy & Herman, 1985). Hence, the restraint hypothesis which was originally developed by Herman and Mack (1975) and further elaborated by Herman and Polivy (1980) posited that the balance between the desire for food and the effort to resist that desire affected eating behaviors. Restrained eaters constantly exhibit worries about what they eat and chronically restrict their food intake in order to avoid becoming fat. However, at times, their self-control becomes temporarily released by disrupting events or ‘disinhibitors’ which may be related to

specific ‘cognitions’ (e.g., the perception of having overeaten), alcohol, or strong emotional states (e.g., anxiety and depression). These disinhibitors trigger overeating in restrained eaters. The restraint hypothesis has been empirically confirmed, particularly in the cognitive aspect that the perception of having overeaten disinhibits restrained eaters (Ruderman, 1986).

While the understanding of the phenomenon of emotional eating has been advanced by the four hypotheses presented above, the current views of researchers in the field have emphasized the need for assimilating the affect regulation and dietary restraint hypotheses (McManus & Waller, 1995; Meyer et al., 1998). Subsequent models have been integrated to include both explanations (Stice, 2001; Stice & Agras, 1999; Stice et al., 2001; Waters et al., 2001). Indeed, it has been consistently found that restrained eaters are likely to overeat under experimentally induced dysphoric moods (Westenhoefer, 1991).

Empirical findings regarding factors related to emotional eating

For non-clinical population, empirical findings regarding factors related to emotional eating may be viewed as follows:

Mood Types

The understanding of a fine-grained association between mood types and emotional eating is obtained through studies that investigated the relationship between different moods and subsequent amount of food intake. Mehrabian (1980) reported that food consumption was higher during the experience of boredom, depression, and fatigue while lower food intake was reported during the experience of fear, tension, and pain. For the overall picture, Ganley (1989) concluded that emotional eating was most

often precipitated by negative emotions such as anger, depression, boredom, anxiety, and loneliness and often bore an episodic relationship to stressful periods of life.

Restrained eating

Restrained eating has been shown to lead to emotional eating. Ward and Mann (2002) reported that normally restrained eaters were vulnerable to emotional eating especially under the circumstance of cognitive load in which they would exhibit disinhibit eating. Upon comparing the situations in which these restrained eaters were likely to rely on emotional eating, the researchers reported that restrained eaters consumed more food when under high cognitive load than when under low cognitive load. In contrast, unrestrained eaters showed the opposite pattern. The researchers explained that cognitive load might disinhibit consumption by preventing restrained eaters from monitoring the dietary consequences of their eating behavior. Along the same line, Keys et al. (1950) found that weight loss might lead to physiological and psychological mood changes and left the individuals preoccupied with food. Hence, restrained eaters with certain amount of weight loss may even become more predisposed to abnormal responses to food.

Ethnic background

Attempts have been made to understand the ethnic background of those vulnerable to emotional eating. According to Steinegger, Dorn, Goody, Philip, Khoury, & Daniels (2005), the issue was not straight forward. African American females were more susceptible to emotional eating upon their early adolescence while Caucasian females showed this vulnerability upon their late adolescence. While studies on the topic remained limited in Asia, a report of the eating behavior in China by Jingxiong et al. (2006) suggested that Chinese grandparents often used food as an emotional tool

upon their interaction with their grandchildren. They shaped the behavior of their grandchildren and expressed love and caring to them through food.

Familial influence

Similar to Jingxiong et al.'s (2006) demonstration of familial influence on children's development of the association of food and emotions, parental behaviour may affect adolescents' emotional eating as well. According to Snoek et al. (2007), parents may influence their children's emotional eating behaviour through modeling processes and parenting styles. In their study of 428 Dutch families, the researchers found positive associations between parents' emotional eating behavior and such behavior of their adolescent children. Additionally, adolescents who reported low maternal support were more likely to exhibit emotional eating. Interestingly, parents' reports of their own parenting styles, in contrast, were not significantly associated with their adolescent children's emotional eating.

Obesity

Several reviews of studies have been conducted to investigate the association between emotional eating and the degree of obesity. While findings remain conflicting to some degree, the majority suggested emotional eating in obese individuals (Ganley, 1989). These findings appeared congruent with the aforementioned psychosomatic hypothesis of emotional eating which proposed that the eating was relied upon by obese individuals in response to negative emotions and was a learned behavior that helped reduce negative emotional discomforts (Kaplan & Kaplan, 1957). Such learning may occur early in life as Braet and Van Strien (1998) reported that obese children had been

significantly higher on emotional eating than their normal weight peers since the age of nine.

Dispositional characteristics

In their recent study, Benjamin and Wulfert (2003) attempted to specify some common characteristics of females who exhibited emotional eating or alcohol abuse behavior. Interestingly, the researchers found that participants who reported either behavior, but not both, had similar dispositional characteristics. Both groups exhibited a high degree of impulsivity and endorsed socially deviant attitudes. While further clarifications regarding the association between these dispositional characteristics and emotional eating remain necessary, these initial findings are intriguing and should lead to further understanding of the mechanism that underlies emotional eating.

Situational characteristics

Certain situations that trigger the aforementioned emotional responses associated with eating (e.g., depression, boredom, and fatigue) mentioned above are likely to elicit emotional eating. Macht, Haupt and Heiner (2004) demonstrated this possibility in their study of changes of eating behavior of students awaiting an exam at a different period (i.e., 3–4 weeks vs. 3–4 days before the exam). Compared with their control counterparts, those awaiting the exam reported higher emotional stress and an increased tendency to eat in order to distract themselves from stress.

With the past literature reviewed above, the present research study were conducted in order to understand the phenomenon of emotional eating, particularly its antecedent, in the context of the Thai culture. Such study should help shed light to a

better understanding of emotional eating and should provide an initial guideline for the preparation of the prevention programs for such phenomenon.

Prior to proceeding to examining psychological variables that are predictive of emotional eating, an initial set of study was first conducted in order to identify the population who were most vulnerable to emotional eating, here dieting female adolescents. Hence, the present study was divided into four parts. In Study 1, initial quantitative studies were carried out to investigate the vulnerability of dieting female adolescents to emotional eating in comparison to male adolescents, female young adults, and non-dieting female adolescents. In Study 2, qualitative data regarding the nature of emotional eating, its psychological outcomes, and the profiles of dieting female adolescents who relied on this coping strategy was obtained. Then, in Studies 3 and 4, the conceptualization and testing of the antecedents as well as the path model that helped explain the antecedents of emotional eating were made. These studies might be viewed as follows.

Study 1

In the first set of study, the vulnerability of dieting female adolescents to emotional eating was established against that of female adolescents, female young adults, and non-dieting female adolescents.

The basis upon which the relatively higher vulnerability of dieting female adolescents to emotional eating was hypothesized came from three lines of literature. The first line of such literature was related to the relatively higher vulnerability of females toward emotional eating in comparison to males. The second line was related to the higher vulnerability of female adolescents, in comparison to that of females of older ages, toward restrained eating, a precedent for emotional eating according to the

restraint theory reviewed above. Finally, the last line of the literature that suggested a higher vulnerability of dieting female adolescents, in comparison to that of non-dieting female adolescents, might be viewed in relation to the restrained food intake if dieting female adolescents which led to emotional eating as suggested by the restrained theory previously reviewed. Details about each line of literature could be found as follows.

To begin with was the vulnerability of females in comparison to males in their emotional eating. Past findings consistently suggested that in general women used more emotion-regulation strategies than did men, and such strategies had repeatedly been associated with emotional eating (Larsen, van Strien, Eisinga, Rutger, & Engels, 2006; Burton & Lightowler, 2006). Evidently, eating apparently evoked different types of mood responses in the two genders. In their recent study, Kenardy, Butler, Carter, and Moor (2003) reported that, after eating, males experienced only a reduction in the negative component of their overall mood, while females gained more benefits of being emotionally responsive to eating overall. Interestingly, eating not only reduced negative mood but also brought about more neutral mood for females than for males.

Secondly is the higher vulnerability of adolescent females toward emotional eating in comparison to older females. This vulnerability might be traced back to the orientation toward self-objectification. According to the recent feminist perspective of Objectification Theory (Fredrickson & Roberts, 1997; McKinley, 2002; McKinley & Hyde, 1996), while the male body was viewed as agentic and active, the female body was socially constructed as an object to be looked at and evaluated. The function of women's bodies, then, is to be attractive, in fact to be sexually pleasing. Hence, women are gradually socialized to internalize an observer's perspective of their physical self. They begin to treat themselves as an object to be evaluated and monitored on the basis of their physical appearance. Such evaluation and monitoring could lead to negative

emotional and experiential consequences, including increased body shame, appearance anxiety, and attempts to monitor their food intake upon the women's recognition that their body shapes and weights did not meet their cultural standards of beauty. The reason why the women were so concerned about physical attractiveness was that they had been socialized to view such attractiveness as the major source from where they obtained their social status and value (Wilcox, 1997).

Interestingly, the more the women scrutinize and monitor their body shapes and weights, the more likely would they spot the flaws in their physical appearance and become dissatisfied with their body image. While body image dissatisfaction is quite stable across the life span, the emphasis that the women place on this dissatisfaction differs according to their ages. According to Tiggemann (2004), the importance of body shape, weight, and appearance is peak during adolescence and then declines afterwards. With age, the women's self-ratings of their body image importance decrease, and their appearance-related attributes are relatively de-emphasized, less scrutinized, and arouse less anxiety (Cash et al., 1986; Pliner et al., 1990; Thompson et al., 1998).

Consequently, when compared with their older counterparts, adolescent women tend to be at a greater risk for negative outcomes of poor body image evaluation (Tiggemann, 2004). This tendency is supported by a recent study by Webster and Tiggemann (2003). According to these researchers, age moderates the relationship between women's body image dissatisfaction and self-esteem, with the relationship between body image dissatisfaction and self-esteem being much stronger in the younger women than in the older ones. For the former, according to Levine and Smolak (2002), body image is "the most important component" (p. 77) of female adolescents' self-esteem.

The reasons why younger women place more emphasis on their physical appearance than their older counterparts may be viewed from different perspectives. To begin with, older women may perceive that their bodies become less sexually objectified and relatively invisible. Consequently, they are more likely to be able to relinquish the internalized observer's perspective on themselves. In contrast, younger women are during their years of reproductive potentials and are most likely to be targeted for objectification (Fredrickson & Roberts, 1997). Furthermore, younger females are still in the earlier stages of their lives and may be yet to gain other sources of self-esteem (i.e., obtaining stable occupational identity, establishing financial independence, or experiencing motherhood) (Tiggemann, 2004). Finally, when compared with older women, the younger ones are found to hold misconception regarding men's preference for the size of female figures (i.e., men prefer women of extremely small bodies) to the greater degree (Demarest & Allen, 2000).

In sum, with their potential to experience a higher degree of dissatisfaction with their evaluation of their body shapes and weights in combination with the high degree of importance that they place on such evaluation, adolescent females should be particularly susceptible to the negative outcomes of body image dissatisfaction and, therefore, exhibit more attempts to improve their body shapes and weights. One way of doing so is through restrained eating which, according to the restraint theory previously reviewed, leaves the individuals with the vulnerability of emotional eating. With their susceptibility to body image dissatisfaction and attempts to modify their body shapes and weights, female adolescents, therefore, are likely to be more vulnerable to emotional eating than older females.

Last but not least is the higher vulnerability of dieting female adolescents toward emotional eating in comparison to non-dieting female adolescents. This

vulnerability might be traced back to the weight loss attempts of the former group which were generally carried out through food restriction. According to the restraint theory (Herman & Mack, 1975; Herman & Polivy, 1980), dietary restraint and emotional eating are positively associated. Such association may be due to the conflict between the individuals' desires for food and their efforts to resist those desires. At times, the individuals' self-control and their efforts to resist the desire for food become temporarily released by disrupting events or 'disinhibitors' (e.g., the perception of having overeaten), alcohol, or strong emotional states (e.g., anxiety and depression), and trigger their overeating and emotional eating (Ruderman, 1986). For this reason, it was hypothesized in this study that dieting female adolescents were likely to be more vulnerable to emotional eating than non-dieting female adolescents.

Hence, Study 1 was conducted to test the hypotheses if dieting female adolescents were relatively more vulnerable to emotional eating than 1) adolescent males, 2) young adult females, and 3) non-dieting female adolescents, respectively.

Method

Participants

A total of one thousand one hundred and seven participants participated in the study. The participants were recruited into one of these three mini-studies that responded to the hypotheses delineated above. Related information regarding the participants in each mini-study could be found below.

Mini-Study 1: Female adolescents in comparison to male adolescents

A total of five hundred sixty five adolescents participated in the present study. Two-hundred eighty-one were male adolescents while 284 were female adolescents. Their overall mean ages were 19.83 years with the mean age of 19.75 years for male participants and 19.92 years for their female counterparts. All of the participants were undergraduate

students in a large public university. The majority of the male participants was in fields of engineering and accountancy, while the majority of their female counterpart was in field of accountancy. Both groups of the male (53.7%) and female (40.8%) participants were in the second year of their undergraduate studies.

Mini-Study 2: Adolescent females in comparison to young adult females

A total of two-hundred fifty-eight females participated in the present study. Both groups were undergraduate and graduate students in a large public university. A hundred and thirty were in their late adolescence with the mean age of 19.93 years and 120 were in their early adulthood with the mean age of 27.87 years.

Mini-Study 3: Dieting adolescent females in comparison to non-dieting adolescent females

A total of two hundred eighty-four adolescent females participated in the present study. All were undergraduate students in a large public university. A hundred and fifty participants reported that they were attempting to loose weight at the time of the data collection and, hence, were considered as the "dieting" sample while a hundred and thirty-four participants who reported that they did not attempt to loose weight then were consider its "non-dieting" counterpart. The mean ages of the dieting and non-dieting samples were 19.88 and 19.87 years, respectively. The body mass index (BMI) of the dieting sample (M = 20.65, SD = 2.96) was significantly higher than that of the non-dieting sample (M = 18.65, SD = 2.09), $t(264.77) = 6.60$, $p < .05$. Based on their reports, the dieting sample aimed to loose an averaged of 5.52 kilograms. The majority of them had attempted to do so 1-3 times in the past year using the weight loss strategies of food restriction and exercise which they had learned from their friends and the media. Unfortunately, such strategies only helped them to loose weight only temporarily and they regained the weight later on.

Instrumentation

All instruments administered in the present study were translated into Thai. The systematic approach for translation was used for its assurance of construct equivalence rather than verbatim equivalence between the original and translated instruments (Brislin, 1970).

In the personal information sheet, the participants were asked to indicate their age, academic background (i.e., major and year of undergraduate study), current weight, ideal weight, and height as well as their weight loss attempts (i.e., whether they had attempted to loose weight within the last year, the amount of weight they tried to loose, the reasons for their weight loss attempts, the strategies and the sources of their strategies for weight loss attempts, and the success of their weight loss attempts) Afterwards, the participants responded to the measure of emotional eating which was the emotional eating subscale of Van Strien, Frijter, Bergers, and Defares's Dutch Eating Behaviours Questionnaire (DEBQ) (1986). The instrument was used to measure the degree that the participants ate in response to their emotional states rather than their physical needs. The participants rated how much they agreed with 13 statements (e.g., "You have the desire to eat when you are emotionally upset" and "You have the desire to eat when you are depressed or discouraged"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .91.

Procedure

In a large group, the participants responded to the questionnaire in one session for 10-15 minutes.

Findings

As hypothesized, dieting female adolescents were relatively more vulnerable to emotional eating than 1) male adolescents, $t(550) = 4.28$, $p < .01$ ($M = 30.22$, $SD = 7.70$ vs. $M = 27.32$, $SD = 8.27$); 2) young adult females, $t(246) = 2.42$, $p < .05$ ($M = 30.10$, $SD = 7.52$ vs. $M = 27.66$, $SD = 8.37$); and 3) non-dieting female adolescents , $t(279) = 2.30$, $p < .05$ ($M = 31.41$, $SD = 7.81$ vs. $M = 29.28$, $SD = 7.65$). Information regarding the results of each mini-study may be found below.

Table 1

Descriptive statistics for emotional eating in the three mini-studies

Mini-studies	Groups	*N*	*Min*	*Max*	*M*	*SD*
1	Female	276	14	59	30.23	7.70
	Male	276	13	56	27.32	8.27
2	Adolescent females	126	14	55	30.10	7.52
	Young adult females	122	13	55	27.66	8.37
3	Dieting female adolescents	150	18	48	31.41	7.81
	Non-dieting female adolescents	131	14	555	29.28	7.65

Table 2

t-statistics for emotional eating in the three mini-studies

Mini-studies	Groups	*df*	*t*
1	Female-Male Adolescents	550	4.28***
2	Adolescent females- Young adult females	246	2.42*
3	Dieting female adolescents- Non-dieting female adolescents	279	2.30*

*$p < .05$, *** $p < .001$

Discussion

Findings from the present study suggested the vulnerability of dieting female adolescents to emotional eating. Such vulnerability was evident when the incidents of emotional eating in this sample were compared to those in male adolescents, young adult females, and non-dieting female adolescents, respectively. Such vulnerability might be explained as follows.

To begin with, in comparison to males, females were more oriented toward the emotional focused coping strategies upon the experience of negative emotions (Larsen, van Strien, Eisinga, Rutger, & Engels, 2006; Burton & Lightowler, 2006). Such coping strategies were apparently related to emotional eating which entailed an intake of food in response to emotional impulses despite no physiological needs. Additionally, when compared with males, females were more vulnerable to self-objectification, the perception that one's body is socially constructed as an object to be looked at and evaluated, which led the individuals to focus on the attractiveness of their bodies rather than their functions (Fredrickson & Roberts, 1997; McKinley, 2002; McKinley & Hyde, 1996). Hence, many women begin to treat their bodies as the objects to be evaluated and monitored on the basis of their physical attractiveness (Wilcox, 1997). Such

evaluation and monitoring can lead to negative emotional and experiential consequences as well as their attempts to monitor their food intake and their becoming vulnerable to emotional eating, based on the restraint hypothesis.

Along the same line, the restraint hypothesis might be used in combination with objectification theory (Fredrickson & Roberts, 1997; McKinley, 2002; McKinley & Hyde, 1996) to explain why adolescent females were more vulnerable to emotional eating than older females. In general, adolescence was the reproductive period in which physical attractive was at stake (Wilcox, 1997) and adolescent females were most likely to be targeted for objectification (Fredrickson & Roberts, 1997). Furthermore, younger females were still in the earlier stage of their lives and might be yet to gain other sources of self-esteem in addition to physical attractiveness (Tiggemann, 2004). With the increased orientation toward self-objectification and, hence, body image dissatisfaction, female adolescents were likely to fall into the vicious trap of restrained eating which left them vulnerable to emotional eating which, in turn, left them with weight gains. This vicious cycle that explained the association between restrained eating with emotional eating could be used to explain the higher experience of emotional eating in dieting female adolescents in comparison to their non-dieting female counterparts as well.

While Study 1 had targeted dieting female adolescents as vulnerable for emotional eating, it was necessary to understand such phenomenon as occurring in this sample. Study 2, consequently, was conducted in order to illustrate the nature of emotional eating in dieting female adolescents.

Study 2

An initial attempt to understand the nature emotional eating in dieting female adolescents was made in this qualitative study. Twenty-three female undergraduates who were attempting to loose weight at the time of the study and exhibited emotional eating met with the researcher and a research assistant for five weekly face-to-face 30-minute interviews and kept a daily log of their eating behavior. The examination of the log together with the discussion with the participants during the interviews regarding the log and their emotional eating in general helped provide information regarding the nature of emotional eating including the types of food consumed during such incidents, the places that the incidents most commonly occurred, and subsequent emotions and behaviors that emotional eating instigated. Additionally, information regarding the participants' attitudes toward their own body shapes and their personalities was obtained. All together, these became the ground for the attempts to come up with the testing of the antecedents of emotional eating in Study 3 and the conceptualization of the model that helped demonstrate the phenomenon in Study 4.

Method

Participants

Initially, twenty-nine female undergraduates who were attempting to loose weight and exhibited some degree of emotional eating participated in the present study in an exchange for a monetary reward. The participants learned about the present study through in-class announcements, electronic mail announcements, and flyers. They contacted the researchers and passed a screening interview. The participants met with the researcher and the research assistant for five weekly face-to-face interviews that lasted approximately 45 minutes. During the week, they were assigned to keep a daily

log of their eating behavior in detail. Six of the participants did not complete the study, leading to a 21% attrition rate, and were not included in the data analysis. Hence, a total of 23 female adolescents were the participants of this study. Their mean age was 20.58. On average, their BMI was 21.50 (*SD* = 2.99) being in the normal weight range, and their GPA was 3.14.

Procedure

Upon passing the screening interview, the participants were assigned to keep a daily log of their eating behavior before going to bed each night. The log was completed in the form provided and covered the detail of the types and amount of food the participants consumed each day as well as the time and reasons for their consumption. Upon the beginning of each meeting, the participants turned in the log upon which the researcher or a research assistant examined. The eating incidents recorded were discussed and the researcher or a research assistant would subsequently determine if they were emotional eating. Through the interview, information regarding the situations that triggered emotional eating as well as detail about the nature of the eating including the types of food consumed, the places of the consumption, as well as the subsequent emotions experienced and behavior conducted were gathered. Finally, information regarding the participants' general attitude toward body image, their current and ideal weights, their weight loss attempts, their personal characteristics, and their emotional eating were gleaned and subsequently analyzed so that they would become useful for the outlining the possible antecedents of emotional eating.

Findings

Data from the interview were analyzed with the main emphases on three major issues: a) participants' eating and dieting behavior in general, b) the incidents of emotional eating and their nature, and c) participants' personal characteristics that might help explain their eating behavior.

a) Participants eating and dieting behavior in general

To begin with, although on average the participants had their BMI in a normal range (M = 21.50, SD = 2.99), they wished to reduce an average of 7.33 kilograms (SD = 4.14). Specifically, more than half of them (52.2%) had reported more than six attempts of weight loss within the last year. The main reason that the majority of the participants (91.3%) carried on for such attempts was to enhance their physical attractiveness. The majority of them tried to loose weight through restrained eating (95.5%) and exercising (61.9%). A smaller portion of them (30.4%), however, relied on diet pills or diet supplementary to loose weight. The media (39.1%) and peer groups (30.1%) were the major sources from where the participants learned about these weight loss methods. Unfortunately, the majority of the participants experienced only temporary success (65.2%). The weight shredded subsequently returned.

Interestingly, it was found that the satisfaction that the participants had with their body shapes was significantly higher when they were assigned to rate their body shape without comparing themselves to their peer groups (M = 61.00, SD = 21.92) than when they did so with peer group comparison (M = 43.00, SD = 14.18), $t(19) = 4.40$, $p < .01$.

b) The incidents of emotional eating and their nature

On average, the participants reported 2.58 (*SD* = 1.73) incidents of emotional eating each week. However, the reports increased significantly during the examination period (*M* = 6.29, *SD* = 2.17), $t(20) = 8.20$, $p < .05$. Correspondingly, when compared with other causes of emotional discomforts; namely, family (43.5%) and peer conflicts (52.2%), stress during examination was listed by most participants (95.7%) as the reason for their emotional eating. Apparently, the eating helped reduce their emotional discomforts, as mentioned in a free-writing from two participants that, *"While I was eating, I felt relaxed and a little bit happier. I forgot my problems. However, afterward, I would feel worried that the food consumed would make me fat and add to my figure. Then I would try to find ways to get rid of the calories gained,"* and *"I ate when I faced problems because I didn't know how to cope with them. The more I think about them, the more stressful I became. Food helped me forget about the problems and made me feel better."*

The major types of food the participants selected for emotional comfort were those with high calories; namely, cake and pastries (30.4%), packaged snack (30.4%), and chocolate (17.4%), respectively. While 56.5% of the participants reported that they were specific about the types of food that they chose to consume to minimize such discomforts, 39.1% mentioned that any types of food would give them comfort.

More than half of the participants (52.2%) turned to food even when they experienced mild emotional discomforts. Some of them (26.1%) pondered about the causes of emotional discomforts and possible solutions upon eating, but the majority (52.5%) reported that they postponed the pondering until the eating was completed and hence got a temporary relief from such discomfort. While 65.2% of such eating took place at home, 30.2% of the incidents happened in public areas; namely, the university

cafeterias and restaurants. Still, 91.3% of the participants preferred to eat alone although the majority did not feel uncomfortable eating in public, if necessary, (73.9%). The majority of the participants did not plan the amount of food to be taken (69.6%) and 52.2% stopped only when they felt too full or recognized that they had eaten too much.

While eating, the majority of the participants reported the enjoyment of the savory (69.6%). Interestingly, some of them confessed that they did not appreciate the taste of the food as much as the simple acts of eating (39.1%). The majority of them (73.9%) did some activities that helped them escepe from the emotional discomforts at hand; namely, watching television, listenning to the music, or reading books while eating.

Approximately two-third of the participants (69.6%) reported that they recognized, while eating, that the eating would interfere with their weight loss attempts. However, almost two-third of them (60.9%) compensated for such recognition reasoning that, since they had already failed their diet restriction plan, it would have been harmless if they had eaten some more. Some participants reported that the emotional eating episodes sometimes (34.8%) or frequently (39.1%) simply resulted from their concerns that they had broken their diet regimen and felt that they would be unsuccessful in their dieting attempts. Nevertheless, only 39.1% of them experienced such guilt mingling with the enjoyment of the food taken during emotional eating while 47.8% experienced pure enjoyment upon the eating.

In general, the participants reported that, when compared with their normal eating, the emotional eating episodes went faster (65.2%) or were at about the same speed (17.4%). On average, the episodes lasted approximately 17.35 (*SD* = 10.78) minutes. After the episodes, the majority of the participants (73.8%) took certain

actions to minimize the effects of the food consumed; namely, exercising (56.5%), skipping subsequent meals (13.0%), and purging (4.3%), respectively. More than half of the participants, 56.5%, reported that they intended to get back to their diet regiment on the next day while 39.1% planned to do so on the next meal.

According to the participants' interviews, the onset of their emotional eating varied. While some of them reported that the eating was first practiced when they were in colleges (43.5%), high schools (21.7%), and middle schools (13.0%), 8.7% of the participants had used food to cope with emotional discomforts when they were only in elementary schools. More than half of the participants (56.5%) had family members or friends who relied on food as their coping strategies, and viewed that everyone else did so as well. However, eating was not their sole option. The majority of the participants reported also that they consulted their friends, boyfriends, or family members when they felt emotional discomforts (87.0%). Still, some felt hesitant to consult their parents for fears that they would be further admonished (43.5%). The majority of the participants (56.5%) felt that they relied too much on eating in coping with emotional discomforts, and the eating led the majority (43.5%) or the total (30.4%) of their weight gains.

c) Participants' personal characteristics

Finally, when the participants were assigned to describe themselves, the majority gave the description of being unconfident (47.8%) and worrisome/easily-prone to emotional discomforts (60.9%). When they faced problems, the majority tended to tend to their negative feelings (52.2%) rather than focusing on the causes of such problems directly (34.8%). In general, the participants believed that the problems would eventually be resolved (61.9%).

Discussion

Data from the initial qualitative study helped provide a rough overview of emotional eating in Thai female adolescents who were attempting to loose weight. Reasons, circumstances, and personal characteristics that might instigate such eating were outlined and used for an additional quantitative analysis in Study 3.

Still, findings from the present study should be viewed with some cautions. It is not irrefutable that the dialogue that the participants had with the researcher or the research assistant as well as their daily recording of eating behavior might have influenced their emotional eating to some degree, especially in the period toward the end of the study.

While findings from Study 2 had shed light on an initial understanding of the phenomenon of emotional eating in dieting adolescent females, the understanding of such phenomenon would not be completed without an explanation of the causes of such eating. In Study 3, psychological factors that were hypothesized to instigate emotional eating, particularly, self-esteem, body image dissatisfaction, and coping strategies would be tested.

Study 3

Drawn from the findings from Study 2, factors that might help explain emotional eating in Thai female adolescents were examined in the present study. These factors were body image dissatisfaction, self-esteem, and coping strategies. The association that each factor had with emotional eating might be viewed as follows.

To begin with was body image dissatisfaction. Past findings had suggested that female adolescents' dissatisfaction with their own body shapes and weights could leave females vulnerable to emotional eating for such dissatisfaction could lead them to

weight loss attempts and maintenance. Such attempts were mostly done through food restriction, which, according to the restraint theory, left the individuals with restrained eating prone to emotional eating (Polivy & Herman, 1985) as previously delineated in details. Hence, body image dissatisfaction was hypothesized to be positively associated with emotional eating.

Secondly was self-esteem or the positive evaluation that the individuals had toward themselves (Rosenberg, 1990; Rosenberg et al., 1995) which reflected the degree to which the individuals experienced themselves as worthy and capable (Rosenberg, 1979). Apparently, individuals who had a positive evaluation toward themselves, were more likely to generate as well as maintain more fruitful social relationships and were equipped with a higher possibility in eliciting social support upon their experiences of emotional discomfort. Additionally, experiencing themselves as worthy and capable (Rosenberg, 1979), those with high self-esteem were likely to feel more assertive and less hesitant in vocalizing their needs and urgency. Therefore, self-esteem was hypothesized to be negatively associated with emotional eating.

Finally, as evident in the interviews in Study 2 and as suggested by the affect regulation hypothesis (Ganley, 1989; Meyer, Waller, & Waters, 1998), emotional eating might be viewed as serving an affect-regulating function, particularly in reducing negative affect. According to this theory, emotional eating helped reducing aversive states of emotional discomforts that the individuals experienced by temporarily ameliorating or numbing negative emotions, distracting them from such states, or helping them to escape temporarily from such states (Arnow et al., 1992; Heatherton & Baumeister, 1991; Polivy & Herman, 1993; Wiser & Telch, 1999). Emotional eating functioned in the way that resembled escape-avoidance coping strategies (Lazarus &

Folkman, 1984). As a result, escape-avoidance coping was hypothesized to be negatively associated with emotional eating.

Participants

196 female undergraduates who attended a general education class in Psychology participated in the present study in an exchange for a class credit. The majority of the participants (63%) were freshmen and the remaining were in the second (20%), third (11%), and fourth (5%) years of their studies. In terms of their area of study, 62% of them were in social science and humanities while the remaining majored in science and technology. Their mean age was 19.31.

Methods

In class, the participants responded to a set of measures that were hypothesized to be associated with emotional eating (i.e., body image dissatisfaction, self-esteem, and escape-avoidance coping) had with emotional eating. These measures and their psychometric properties were as follows:

Emotional eating. Jackson and Hawkins' (1980) Mood Eating Scale was used to measure the degree that the participants used eating to obtain emotional comfort when experiencing emotional discomforts. The participants rated how much they agreed with 20 statements (e.g., "I find myself eating more than usual during periods of great stress (e.g., breaking up with lovers, final exam weeks, starting college) "), referring to a scale ranging from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .86.

Body image dissatisfaction. Mezzeo's (1999) Body Shape Questionnaire-Revised was used to measure the degree that the participants felt displeased with their weights and body shapes. The participants rated how much they agreed with 10 statements (e.g., "I feel ashamed of my body"), referring to a scale ranging from 1

(strongly disagree) to 7 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .92.

Self-esteem. Rosenberg's (1965) Self-esteem Scale was used to measure the degree that the participants evaluated their worth. The participants rated how much they agreed with 10 statements (e.g., "I feel I do not have much to be proud of"), referring to a scale ranging from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .87.

Escape-avoidance coping. The Escape-avoidance subscale of Folkman's Ways of Coping- Revised (1985) was used to measure the degree that the participants used escape or avoid coping strategies. The participants rated how much they agree with 8 statement (e.g., "I wished that the problems would go away or somehow be over with"), referring to a scale ranging from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .52.

Findings

Descriptive statistics of emotional eating and variables tested as their antecedents were shown in Table 3.

Table 3

Descriptive statistics of variables studied

Variables	*N*	*Min*	*Max*	*M*	*SD*
Emotional eating	195	24.00	124.00	69.84	18.46
Body Image Dissatisfaction	196	23.00	70.00	51.12	9.37
Self-esteem	196	12.00	70.00	39.60	13.19
Escape coping	196	8.00	29.00	19.63	3.34

Table 4

Possible predictors of emotional eating (n = 196)

	B	*Beta*	*t*
Body Image Dissatisfaction	.23	.16	2.34*
Self-esteem	-.28	-.14	-2.00*
Escape Coping	.67	.12	1.73

* $p < .05$, constant = 8.90, $R = 0.24$, $R^2 = .06$

Table 4 showed that the degree that the participants felt dissatisfied with their body image and the levels of their self-esteem helped predict their scores in emotional eating, $F(3, 191) = 4.98$, $p < .01$. Interesting, however, escape-avoidance coping strategies were not predictive of the eating.

To further clarify the relationship that escape-avoidance coping had with emotional eating, an additional analysis was conducted to compare the scores of escape-avoidance coping in those in the lowest and highest quartiles of emotional eating (the cut-off score for those in the lowest quartile was 58 and the one for those in the highest quartile was 81). Findings suggested that the scores of the two groups differed significantly, $t(98) = 2.44$, $p < .05$. In short, when compared with others, participants who was in the highest quartile in emotional eating used significantly more avoidance-escaped coping (M = 20.46, SD = 3.12) than those who was at the lowest quartile (M = 18.82, SD = 3.59).

Discussion

Findings from the present study helped initially clarify the antecedents of emotional eating to some degree. The findings that body image dissatisfaction and self-esteem helped predict emotional eating appeared reasonable. In terms of body image dissatisfaction, it was possible that the concerns that the participants had with body shapes and weights would prompt them to engage in diet restriction, might have left the participants with distorted view about eating. Hence, the more they tried to suppress their urges for eating, the more likely would they view eating as desirable or comforting upon the experience of emotional discomforts in which their self-regulation became weakened (Abramson, 1998). As for self-esteem, findings suggested that participants who reported low self-esteem were likely to engage in more emotional eating. The findings appeared reasonable giving the possibility that the participants who perceived themselves as unworthy would experience the feelings of despair and helplessness. Instead of finding the ways to directly deal with the causes of their emotional discomforts, these participants might have felt desperate and chose to obtain emotional comfort through eating. Additionally, having low respect for themselves, the participants might have not had sufficient incentives to avoid the "harms" of emotional eating or to become assertive of their concerns in order to elicit appropriate social support.

The relationship that avoidance-escape coping had with emotional eating appeared more complicated, however. While the regression analysis did not suggest the coping as an antecedent of the eating, additionally analyses of the use of escape-avoidance coping in those high and low in emotional eating demonstrated some differences with those high in emotional eating using more of avoidance-escape coping. Still, it would be interesting to examine if psychological variables that were related to

this coping strategies; namely, helplessness would be relevant to emotional eating. Additional variables that might be related to emotional eating; namely, external eating, restrained eating, stress, and BMI should be tested as possible antecedents of emotional eating using a more sophisticated statistical analysis; namely, a path model (Jöreskog & Sörbom, 1996).

Study 4

In response to the limitations of Study 3, a more sophisticated statistical analysis, path analysis (Jöreskog & Sörbom, 1996), hence, was used to illustrate the antecedents of emotional eating in Study 4. The path model that should have helped explain the phenomenon of emotional eating in dieting Thai female adolescents was tested. Based on the literature review and the data obtained in Studies 2 and 3, such model included a host of psychological factors relevant to emotional eating. These factors were 1) Body Mass Index (BMI), 2) body image dissatisfaction, 3) body preoccupation, 4) restrained eating, 5) external eating, 6) stress, 7) self-esteem, 8) helplessness, and 9) social support. The first five variables could be viewed as those relevant to individuals' physical characteristics and eating behavior while the remaining four variables could be viewed as those relevant to individuals' personalities. The relationships that these two sets of variables had with emotional eating might be viewed as follows:

Variables relevant to individuals' physical characteristics and eating behaviors

The first set of variables hypothesized to be associated with emotional eating was those relevant to the individuals' physical attractiveness and eating behaviors. These variables included Body Mass Index (BMI), body image dissatisfaction, body image preoccupation, restrained eating, and external eating. Their associations might be reviewed as follows.

To begin with was external eating which should be closely associated with emotional eating. As suggested by its definition, emotional eating was the intake of food in response to emotional impulses despite no physiological needs and this shared some similarity with external eating in which the eating was not instigated by physiological needs. Along the same line, the weakened association between physiological needs and the eating behaviors, as evident in external eating, was resonated in different theories that had been used to explain emotional eating; namely, the psychosomatic theory (Kaplan & Kaplan, 1957) which proposed that individuals who were prone to emotional eating were low in interoceptive awareness and were likely to eat in response to any arousal states, which undoubtedly included the stimulation from external stimuli. Along the same line, Bruch (1973), an advocate of Schachter et al.'s (1968) theory of emotional eating, proposed that individuals with emotional eating were low in their abilities to differentiate hungers from other signals that were irrelevant to food deprivation. Possibly, such signals might be partly elicited from the individuals' external stimuli.

Individuals' orientations toward external eating, or degree that the individuals consumed food based on situational cues (Van Strien, Frijter, Bergers, & Defares, 1986), might be used to explain why, upon their food restraint, the individuals were more prone toward emotional eating. Although external eating sounded contradictory to restrained eating which entailed the individuals' attempts to restrict food for weight loss or maintenance (Polivy & Herman, 1985), external eating might have played a role in explaining why restraint eater lapsed and relied on emotional eating to some degrees. According to the advocates of the restraint theory of emotional eating (Herman & Mack; 1975; Herman & Polivy; 1980), restrained eaters were constantly worried about what they ated and chronically restricted their food intakes in order to loose or maintain their

weights. However, at times, their self-control became temporarily released by disrupting events or 'disinhibitors'. Upon such releases, some restrained eaters ate in order to ameliorate their emotional discomforts. The releases that led to this eating were likely to be the circumstances of high cognitive load (Ward & Mann, 2002). Apparently, external stimuli had played some roles in the releases of overeating in restraint eaters and some associations might be observed between external eating and the mechanism in which restrained eating led the individuals to overeat upon their experiences of disinhibitors.

With empirical support (Ruderman, 1986), the restraint hypothesis suggests that individuals who were on food restriction for the purposes of weight loss or maintenance (Polivy & Herman, 1985) were more likely to become susceptible to emotional eating than those who were not on food restriction. Hence, for the prevention of emotional eating, it would be informative to identify individuals who were at risk of restrained eating. Who were these individuals? Apparently weight loss and maintenance attempts had been commonly reported in women (Cash & Roy, 1999; Kilbourne, 1994; Rodin, Silberstein, & Striegel-Moore, 1985). Apart from the logical reasons of maintaining good health or avoiding obesity-related illness (WHO, 2003), women's dissatisfaction with their own body shapes and weights as well as their preoccupation with the enhancement of their physical attractiveness could leave them vulnerable to emotional eating for the following reasons.

First, the dissatisfaction with ones' own body shapes and weights might lead female adolescents to weight loss attempts and maintenance through restrained eating which, in turn, left them vulnerable to emotional eating. Different from other body parts, individuals generally felt that body shapes and weights were most readily modifiable (McKinley & Hyde, 1996; Tiggemann & Rothblum, 1997). Interestingly, women

appeared to be particularly concerned with this modification. According to Cash and Roy, 1999, women spent their time trying to resolve their concerns about their body shapes and weights so far more than their male counterparts that this dissatisfaction was labeled the "normative discontent" among women (Rodin, Silberstein, & Striegel-Moore, 1985). In his recent study**,** Kilbourne (1994) reported that losing weight was listed by his female participants as one of the most important goals in their lives, often in a higher priority than other goals; namely, success in their careers or relationships. For these participants, gaining weight was the factor that was most likely to leave them dissatisfied with their body image (Garner, 1997), and such dissatisfaction affected their global self-esteem to a great extent (Miller & Downey, 1999; Triggermann, 2004). Hence, this led them to weight loss attempts through food restriction.

Attempts had been made to explain body image dissatisfaction in females, and this led to the second variables included in the proposed model, body image preoccupation, which was regarded as preceding body image dissatisfaction which was hypothesized to predict restrained eating, which, in turn, should be associated with emotional eating. Fredrickson and Roberts' (1997) objectification theory helped explain women's preoccupation with the attractiveness of their physical appearance. In this feminist-based theory, Fredrickson and Roberts (1997) posited that females were commonly perceived as sexual objects in the majority of cultures. Their appearance and their attractiveness were viewed as essential in their success in life. More attractive females had more opportunities in dating, getting married, as well as other privileges (Berscheid, Dion, Walster, & Walster; Margolin & White as cited in Rubino, Twenge, & Fredrickson, 2002). Hence, many females viewed their body not in terms of its function or physical well-being. Instead, they paid more attention to its aesthetic quality. These females would constantly monitor their appearance, evaluated it as if it

was an object and attempted to correct any flaws they found with their appearance. Less emphasis was given to their inner qualities; namely, their integrity or intellectual capabilities which became foreshadowed by their physical attractiveness (Fredrickson & Roberts, 1997).

Unfortunately, the more the females were preoccupied with their body shapes and weights and dedicated their energy and resources to body image enhancement, the more likely would they see physical flaws in their physical appearance and the lesser degree of satisfaction would they obtain regarding their body image. Since the internalization of objectification was commonly higher in females than in males, this might help partially explain why females experienced a higher degree of body image dissatisfaction and fell into the vicious cycle of attempting to enhance their physical attractiveness (Fredrickson & Roberts, 1997). One way of such enhancement might be done through food restriction which was likely to leave them vulnerable to emotional eating and, subsequently, weight gains.

Still, females might be vulnerable to the experience of self-objectification to a different degree. In general, females who had been socialized to focus on viewing their bodies in terms of their physical functions; namely, females who play sports, were less likely to succumb to the view of objectification and were less likely to base their self-worth on their physical attractiveness. Age played an important role in this vulnerability as well. According to Fredrickson and Roberts (1997), adolescence was the prime period in which females were particularly vulnerable to self-objectification. Fredrickson and Roberts (1997) explained this vulnerability drawing from the reasons that adolescence was the period in which romantic relationship was formed and such relationship was undeniably based, at least partially, on physical attraction. As previously mentioned, attractive females had more opportunities in dating and getting

married (Berscheid, Dion, Walster, & Walster; Margolin & White as cited in Rubino, Twenge, & Fredrickson, 2002). Hence, physical attractiveness became particularly important for adolescent females whom, unsurprisingly, had been reported to be particularly vulnerable to the experience of body image dissatisfaction (Rodin, Silberstein, & Striegel-Moore, 1985).

Hence, body image preoccupation and body image dissatisfaction which, according to past literature, should have been predictive of restrained eating or the attempts for weight loss or maintenance, were included in the proposed model. In addition to body image preoccupation, another physical characteristic that had been considered was BMI. While the association between this variable and body image dissatisfaction might not be as stringent as the one that the dissatisfaction had with body image preoccupation, BMI which helped provide an estimation of the proportion of the individuals' weights in relation to their heights should have provided a rough indication of the satisfaction that the individuals had regarding their body image satisfaction.

Therefore, BMI had been included in the proposed model as another predictor of emotional eating for its association with body image dissatisfaction. In and of itself, however, this variable deserved an inclusion. Based on past literature, extra-weight and obesity have been documented as being associated with emotional eating. According to Schachter et al. (1968), while normal weight individuals might either decrease or increase their eating upon experiencing emotional discomforts, obese individuals would not decrease their eating in this circumstance. In one of their initial studies, Schachter et al. (1968) found that, for their normal weight participants, stress decreased eating among those who were hungry and had no effects on those not hungry. In contrast, their overweight participants ate the same amount of food regardless of their psychological

states. Several studies were conducted to investigate the association between emotional eating and the degree of obesity. While findings remain conflicting to some degree, the majority suggested emotional eating in obese individuals (Ganley, 1989). These findings appeared congruent with the aforementioned psychosomatic theory of emotional eating which proposed that the eating was relied upon by obese individuals in response to negative emotions and was a learned behavior that helped reduce their discomforts due to negative emotion (Kaplan & Kaplan, 1957). Such learning might occur early in life as Braet and Van Strien (1998) reported that obese children had been significantly higher on emotional eating than their normal weight peers since the age of nine.

Variables related to individuals' stress and personalities

The second set of variables included in the proposed model was related to individuals' personality, and these variables were stress, self-esteem, social support, and helplessness. The inclusion of these variables was based on past literature that suggested the conceptualization of the association between these variables and emotional eating.

To begin with was the association between stress and emotional eating. As suggested by its operational definition, emotional eating did not result from general hungers but from individuals' desires to obtain emotional comfort. The incidents that such comfort was sought for were likely to increase upon the individuals' experiences of tension or stress which was the condition that led the individuals to perceive a discrepancy, whether real or not, between the demands of the situation at hand and the resources of their biological, psychological or social systems (Lazarus, 1974; Lazarus & Folkman, 1984). While stress could be positive, as in the case of eustress, and enhanced individuals' functions and motivation, persistent stress that was not resolved

through coping or adaptation (Selye, 1976) might lead to escape or withdrawal behavior (Lazarus, 1974).

The attainment of emotional comfort from food that helps the individuals to escape from negative affects at hand had been documented in different hypotheses proposed to explain emotional eating. According to the psychosomatic hypothesis (Kaplan & Kaplan, 1957), some individuals, particularly those who were not very well able to recognize whether they were hungry or satiated, were likely to eat in response to arousal states, particularly the negative ones; namely, stress and anxiety. While the mechanism by which eating helped reduce this discomfort was not completely understood, researchers generally explained that emotional eating developed through past learning in which the eating left the individuals with emotional comfort that helped mitigate the negative affects experienced (Kaplan & Kaplan, 1957). Bruch (1973) explained that individuals with emotional eating had some early experiences that interfered with their abilities to differentiate hungers from other signals of discomfort and simply relied on food to ameliorate such discomfort.

Along the same line, the affect regulation theory proposed that eating served as affect-regulating function, particularly in negative affect reduction (Ganley, 1989; Meyer, Waller, & Waters, 1998) for some individuals. For these individuals, emotional eating helped reducing aversive emotional states by temporarily ameliorating or numbing their negative emotions, or distracting them from such states (Arnow et al., 1992; Heatherton & Baumeister, 1991; Polivy & Herman, 1993; Wiser & Telch, 1999). Subsequent findings supported this theory. Recently, Whiteside et al. (2006) provided an evident that emotional eating was used to cope with negative emotions particularly

in individuals who experienced difficulties identifying and making sense of emotional states and who had a deficit of skills to functionally modulate negative emotion.

Hence, stress, which generally entailed negative emotion might have left some individuals vulnerable to emotional eating for the aforementioned reason. In addition to stress, the individuals' skills and abilities to functionally cope with the negative affects experienced at hand appeared to play a role in their reliance on emotional eating as well, as suggested by Whiteside et al. (2006). Hence, three additional personality variables: helplessness, social support, and self-esteem had been included in the present study as being associated with the use of emotional eating for the following reasons.

To begin with was helplessness. According to Seligman (1975), helplessness reflected the degree to which the individuals perceived that they had no control over the situations at hand and felt that any attempts made to cope with them were futile. While stress was a common experience, it was likely to plague more individuals who perceived that they had no control over the resolution of the depressive situation at hand or the negative emotion it entailed. Attributing that the negativity was global, stable, and beyond their control (Abramson & Sackeim, 1977), instead of trying to handle emotional discomforts proactively or effortfully, individuals who were higher in helplessness were more likely than those who were lower in this psychological factor to resort to a momentary relief from the emotional discomforts at hand. Hence, those reporting high helplessness may have become more vulnerable to emotional eating.

In contrast, the vulnerability to emotional eating may have been mitigated by the second personality variable, the social support. Past findings demonstrated consistently that individuals who received psychological or material resources from their significant others; namely, friends or family members adjusted much more

effectively than those who did not receive such supports (S. Cohen & Syme, 1983; House, 1981; Kessler & McLeod, 1985). In and of itself, social support helped provide a buffer against stress, which previously reviewed as plausibly associated with emotional eating. According to Cohen and Wills (1984), the perceived availability of interpersonal resources that were responsive to the individuals' needs elicited upon stressful events helped ameliorate the negative emotion experienced by the individuals a great deal. Hence, social support should have helped provide a buffer for emotional eating preceded by stress and equipped the individuals with the instrumental resources that helped them cope better with the negative event at hand.

As shown above, social support appeared to play an important role in providing the individuals with a buffer against emotional eating. In addition to this variable, another variable was included and tested in the model based on its association with social support. This variable was self-esteem. Self-esteem was the psychological construct that had been widely studied in the field of personality psychology. In and of itself, self-esteem was the positive or negative evaluation that the individuals had toward themselves (Rosenberg, 1990; Rosenberg et al., 1995) and it reflected the degree to which the individuals experienced themselves as worthy and capable (Rosenberg, 1979). Past literature had demonstrated that self-esteem played a key role in the understanding the individuals' functioning in many aspects, including the possibility that they would receive social support for the following reasons.

To begin with, past findings had demonstrated that high self-esteem helped promote social relationships (Dekovic & Meeus, 1997; Goodwin, Costa, & Adonu, 2004; Leary et al., 1995), especially in adolescents (Asendorpf & van Aken, 2003). Apparently, adolescents with high self-esteem or those who had a positive evaluation of

themselves, were likely to feel at ease, were more capable, and could generate as well as maintain more fruitful social relationships. Their pool of social relationship was likely to be larger than those with lower self-esteem, and this helped allow them to be equipped with a higher possibility in eliciting social support. Additionally, experiencing themselves as worthy and capable (Rosenberg, 1979), individuals with high self-esteem were likely to feel more assertive and less hesitant in voicing their needs for social support. Hence, they were likely to elicit and receive more social support than the individuals with low self-esteem.

From the review of past literature and the conceptualization provided above, the relationship between factors that were hypothesized to predict emotional eating would be investigated using a path analysis.

Method

Participants

A total of three-hundred and sixty-five dieting late-adolescent females participated in the present study. Their mean age was 19.93 years. All of them were undergraduate students in a large public university. The majority was in fields of social science and humanity and was in their second (39.4%) and third (26.2%) years of studies, respectively. Their current weights averaged at 52.75 kilograms (*SD* = 7.83) while their ideal weights averaged at 47.68 kilograms (*SD* = 4.93). The discrepancies between their current and ideal weights averaged at 5.07 kilograms (*SD* = 4.58).

Forty-nine percent of the participants had attempted to loose weight one-three times in the past year whereas thirty-two percent had done so more than six times. Sixty-eight percent of the participants explained that their weight loss attempts had been made to enhance their physical attractiveness and their self-confidence while only

seven percent referred to their own health/physical fitness. Additionally, dietary restraint was ranked as the most popular strategy for their weight loss attempts followed by exercising. According to the participants, friends and the media were the major sources that they learned about weight loss strategies. Despite relying on these strategies, the majority of the participants (62.3%) succeeded only temporarily in their weight loss attempts and regained the weight shredded shortly afterward.

Instrumentation

All instruments administered in the present study were translated into Thai. The systematic approach for translation was selected here for its assurance of construct equivalence rather than verbatim equivalence between the original and target languages (Brislin, 1970).

In the information sheet, the participants were asked to indicate their weight and height as well as details regarding their ideal weights and their weight loss attempts. Afterwards, the participants responded to ten instruments measuring the key constructs, emotional eating and its hypothesized predictors, in the present study. Each construct and the psychometric properties of its instrument are reviewed below.

Emotional eating. The emotional eating subscale of Van Strien, Frijter, Bergers, and Defares's Dutch Eating Behaviours Questionnaire (DEBQ) (1986) was used to measure the degree that the participants ate in response to their emotional states rather than their hunger. The participants rated how much they agreed with 13 statements (e.g., "You have the desire to eat when you are emotionally upset" and "You have the desire to eat when you are depressed or discouraged"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .91.

Restrained eating. The restrained eating subscale of Van Strien, Frijter, Bergers, and Defares's Dutch Eating Behaviours Questionnaire (DEBQ) (1986) was used to measure the degree that the participants limited their dietary input in order to control their body weight. The participants rated how much they agreed with 10 statements (e.g., "You refuse food or drink offered because you are concerned about your weight," and "You try to eat less at mealtimes than you'd like to eat"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .93.

External eating. The emotional eating subscale of Van Strien, Frijter, Bergers, and Defares's Dutch Eating Behaviours Questionnaire (DEBQ) (1986) was used to measure the degree that the participants ate as a result of external triggers rather than their hunger. The participants rated how much they agreed with 10 statements (e.g., "If you walk pass a baker, you have a desire to buy something delicious" and "If food tastes good to you, you eat more than usual"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .90.

Body image dissatisfaction. Mezzeo's (1999) Body Shape Questionnaire-Revised was used to measure the degree that the participants felt displeased with their body shapes and weights. The participants rated how much they agreed with 10 statements (e.g., "I feel ashamed of my body"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .92.

Body preoccupation. The Body Surveillance subscales of McKinley and Hyde's (1996) Objectified Body Consciousness Scale was used to measure the degree that the participants felt concerned about their body shapes and weights. The participants rated

how much they agreed with 8 statements (e.g., During the day, I think about how I look many times"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .85.

Self-esteem. Rosenberg's (1965) Self-esteem Scale was used to measure the degree that the participants evaluated their worth. The participants rated how much they agreed with 10 statements (e.g., "I feel I do not have much to be proud of"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .88.

Helplessness. The self-invented 9-item Helplessness Inventory was used to measure the degree that the participants felt helpless upon their controls of their lives. The participants rated how much they agreed with 9 statements (e.g., "I cannot control too many things that have happened to me" and "I feel that I cannot control too many important things in my life"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .88.

Stress. The stress subscale of Lovibond & Lovibond's (1995) DASS-Stress Scale as translated into Thai by Iamsupasit (2001) was used to measure the degree that the participants experienced stress. The participants rated how much they agreed with 7 statements (e.g., "I feel I do not have much to be proud of"), referring to a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .85.

Social support. The self-invented 6-item Social Support Inventory was used to measure the degree that the participants felt that they that they had received emotional and instrumental support from those around them. The participants rated how much they agreed with 6 statements (e.g., "There are people I can turn to when I am in troubles" and "When needed, I can ask for assistance from my friends"), referring to a

scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha estimate for the scores on this scale was .83.

BMI. The index was used to measure the participants' weight in relation to their height. It was computed using the formula from the Centers for Disease Control and Prevention (2005) based on self-reported weight and height. Thus far, the BMI has been considered a more accurate measure than weight because it takes into consideration the individuals' height and ethnic groups. For the Asian, those with the BMI below 18.5 are classified as underweight, between 18.5 and 22.9 as normal, between 23.0 and 25.9 as overweight, and 26 and above as obese.

Procedure

In a set of questionnaires, the instruments were used to collect data in one session. In a large group, the participants responded to the questionnaires for 20-25 minutes. Two alternate forms of the questionnaires were administered in order to minimize the carry-over effects.

Findings

Findings regarding Descriptive Analysis

The means, standard deviations, as well as the intercorrelations among the study variables in the Pearson product-moment correlation coefficients were computed using a SSPS 13.0 for Windows (Norusis, 2000). These descriptive results are shown in Table 5.

Table 5.

Means and standard deviations of the study variables (N = 365)

	N	*Min*	*Max*	*M*	*SD*
Emotional Eating	356	14.00	59.00	30.18	8.12
Body image Dissatisfaction	355	12.00	45.00	28.58	8.10
External Eating	356	18.00	50.00	35.52	6.72
Body Preoccupation	356	12.00	38.00	26.49	4.36
Social Support	356	11.00	30.00	23.58	3.73
Restrained eating	356	11.00	50.00	28.99	6.74
Stress	356	8.00	25.00	15.47	2.98
Helplessness	356	9.00	40.00	20.08	4.87
Self-esteem	356	15.00	45.00	34.45	5.20
BMI	353	10.76	34.11	20.38	2.54

Table 6.

Intercorrelations among the study variables (N = 365)

	Emotional Eating	Social Support	Body Dissatisfaction	External Eating	Body Preoccupation	Restrained eating	Stress	Helplessness	Self-esteem	BMI
Emotional Eating	1									
Social Support	.02	1								
Body Dissatisfaction	.22**	.05	1							
External Eating	.43**	.15**	.28**	1						
Body Preoccupation	.140**	.05	.48**	.21**	1					
Restrained eating	-.06	.05	.29**	-.13**	.26**	1				
Stress	.16**	-.17**	.19**	.10*	.22**	.02	1			
Helplessness	.16**	-.29**	.23**	.06	.10*	-.08	.33**	1		
Self-esteem	-.11*	.29**	-.30**	.04	-.10*	.03	-.28**	-.67**	1	
BMI	.02	-.05	.28**	-.08	-.07	.02	.00	.04	-.08	1

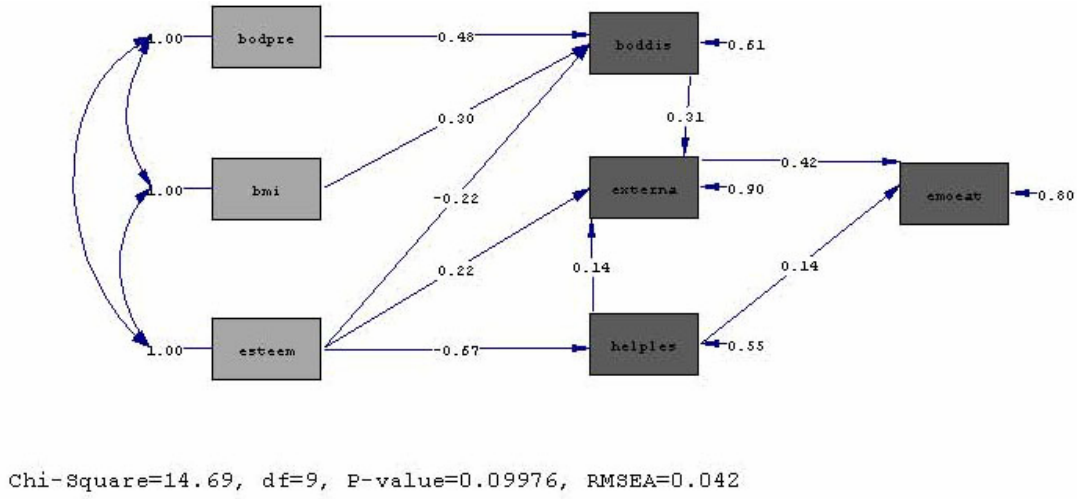
* $p < .05$, ** $p < .01$

Findings regarding the path analysis

The relationships between emotional eating and tested variable were examined using the Path Analysis approach offered by the computer program LISREL 8.5 (Jöreskog & Sörbom, 1996).

Figure 1

The path model for emotional eating



Bodpre = Body preoccupation, BMI = Body Mass Idex, Esteem = Self-esteem, Boddis = Body image dissatisfaction, Externa: External eating, Emoeat: Emotional eating

Overall, the fit of the tested path models were assessed using the χ^2 statistic and a variety of practical model fit indices. Findings suggested the χ^2 in which the associated *p*-value was non-significant (χ^2= 14.69, *p* = .10), in accordance with the typical criterion for the good fit with the data of a model proposed by Jöreskog and Sörbom (1996). Hence, the proposed model fit well with the data. Another index of practical fit, the root mean square error of approximation (RMSEA) which was an absolute index of fit, was also examined and it was 0.04. According to Browne &

Cudeck (1993), RMSEA values under .05 indicated close fit with the data. Based on the two criteria, hence, the model had a good fit with the data.

Discussion

Findings from the present study helped support the good fit of the proposed model that helped explain the phenomenon of emotional eating of dieting Thai female adolescents. The path model suggested that both external eating and helplessness were positively associated with emotional eating. The degree that the sample consumed food based on situational cues or their inclination toward external eating (Van Strien, Frijter, Bergers, & Defares, 1986) and the degree that the sample perceived that they had little control over their environment or the degree that they experienced helplessness (Seligman, 1975, 1990) were likely to lead them to rely on emotional eating.

Additional associations could be observed in the final model. Body image dissatisfaction apparently had a positive association with external eating. Interestingly, individuals who experienced a higher degree of dissatisfaction with their body shapes and weights exhibited a higher degree of external eating. Body image dissatisfaction, in turn, may be traced back to two variables, body image preoccupation and body mass index (BMI). As suggested by past literature and empirical findings, the more the female adolescents were concerned and preoccupied with their physical attractiveness, the more likely would they observe the flaws in their physical appearance and experience body image dissatisfaction. In general, such associations went in the manner predicted. In comparison to their actual BMI, which in part contributed to such dissatisfaction, as evident in the present study, body image preoccupation played an even more significant role in predicting individuals' body image dissatisfaction. Findings from the present study replicated past findings that emphasize the subjective nature of body image evaluation in that the outcomes of such evaluation depend on the

subjective views of the evaluators. Many of the females, despite their perfectly normal BMI, could still experienced body image dissatisfaction. In contrast, some females, although their BMI might fall well beyond the normal range might feel very satisfied and contented with their body shapes and weights.

With the above explanation, it appeared logical, hence, to find that self-esteem was associated with body image dissatisfaction as well. Such association went in the negative direction in that the individuals with high self-esteem, or those who had positive evaluation of themselves and were well-aware of their own worth, were likely to experience a lower degree of body image dissatisfaction. In contrast, the experience would be higher for those with negative evaluation of themselves. Possibly, the assurance of their overall self-worth would direct the female adolescents from the sole reliance on their physical appearance as the source for their self-evaluation and provide them with the buffer against the dissatisfaction should they have found flaws and deviations of their physical appearance from their cultural standards. Hence, self-esteem was found to be negatively associated with body image dissatisfaction in the present model.

Additionally, self-esteem was found to be associated with helplessness and external eating. Such associations were negative in the former and positive in the latter. To begin with the negative association between self-esteem and helplessness, this might be explained by past findings that the individuals who had positive evaluation toward themselves were likely to experience higher efficacy and higher control over their environment, and this should have provided them with a buffer against their experience of helplessness. The explanation of the positive association between self-esteem and external eating was not as straightforward, however. As suggested in the model, interestingly dieting female adolescents with a higher degree of self-esteem reported a

higher incident of external eating. While, thus far, past findings had not provided evidence to support or contradict such findings, future investigations on the topic should be valuable.

Future studies should benefit as well from an investigation of the lack of association that emotional eating had with stress, social support, and restrained eating. To begin with was stress which was found to have no association with emotional eating in the final model. The lack of such association might be understandable should the definition of emotional eating was scrutinized carefully. While the eating generally helped alleviate the individuals' negative emotion, such emotion did not need to be necessarily stress. Not including the possibility that emotional eating could be triggered by positive emotion as well (Jackson & Hawkins, 1980), a host of negative emotional states, in addition to stress, could elicit emotional eating. They were, for instance, anxiety, disappointment, anger, or jealousy. This might help explain why stress, specifically, might not be sufficient to explain the phenomenon of emotional eating.

As for social support, while the explanation for its lack of association with emotional eating in the final model might not be as straightforward as that for stress. It was interesting to find that the associations that social support had with self-esteem and helplessness went in the directions hypothesized. Based on Table 6, social support was positively associated with self-esteem and negatively associated with helplessness. The lack of such associations in the final model warranted some further investigations.

The role of restrained eating in explaining emotional eating deserved even more careful consideration. Interestingly, restrained eating was not associated with emotional eating in the final model. Instead, body image dissatisfaction and self-objectification which had been reviewed to be close associates of restrained eating were found to

associate directly with external eating, instead. Possibly, the emphasis that the participants placed on their physical appearance which led them to monitor and attempt to enhance their physical appearance and, hence, left them into the vicious cycle of body image dissatisfaction possibly led them to become particularly sensitive to the external cues of their eating even without their weight loss attempts. Such possibilities warranted further investigations in the future as well.

Future studies should benefit as well from the inclusion of additional variables that may help enhance the comprehensiveness of the model in explaining emotional eating. Such variables might be, namely, impulsivity which refers to the individuals' inclinations to act or respond to a situation based on impulse without careful consideration of its consequences. When compared with other mood regulators, food apparently is likely to be handier and more readily available to the individuals upon their experiences of negative emotion. Hence, for individuals who were high in impulsivity, emotional eating might be a more preferable alternative, in comparison to other coping strategies, for its instant gratification. The addition of such variable, together with the use of a more advanced statistical analysis, particularly structural equation modeling (SEM) and the reference to the various practical model fit indices; namely, the χ^2-test, comparative fit index (CFI) (Bentler, 1990), adjusted goodness-of-fit index (AGFI) (Steiger, 1990) and a root mean square error of approximation (RMSEA) should yield even more credibility and practicality to the model that will bring about a better understanding regarding emotional eating.

General discussion

In the present study, attempts were made to shed light on the rarely studied phenomenon of emotional eating in the Thai culture. Findings from Study 1 identified the population who would be most vulnerable to the phenomenon and that was dieting female adolescents. The explanations for such vulnerability had been given in relation to the general norm that placed a higher emphasis on the evaluation of females, particularly those in their adolescence, based on their physical attractiveness. Such evaluation led adolescent females, to monitor their body shapes and weights and, at time, limit their food intake, and, hence, became vulnerable to emotional eating.

Findings from Study 2 helped provide the qualitative data regarding the nature of emotional eating in this high-risk population. Information regarding the levels of emotional discomfort that drove the participants to emotional eating, the types of food that they used to alleviate such discomfort, as well as the resulting outcomes, to name some, had been gathered and analyzed for a better understanding of the phenomenon of emotional eating. Similarly, the characteristics of dieting female adolescents who were prone to emotional eating had been initially deciphered.

Data from Study 2 become the ground for the studies of factors that helped predict emotional eating in Study 3 and the conceptualization of the model helped explain emotional eating more comprehensively in Study 4. The resulting model appeared useful in establishing a logical ground to conceptualize the initiation and development of emotional eating and in providing a direction for the implementation of a prevention program against emotional eating in dieting female adolescents.

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