Developmental and Situational Factors Contributing to Changes in Eating Behaviour in First-Year Undergraduate Women

By Jennifer L. Boyd

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Jennifer Lynn Boyd

Abstract

The purpose of the present study was to evaluate the importance of developmental history and current life events in predicting changes in eating behaviour in undergraduate women. The developmental variables tested were parents' general parenting style and also how parents interacted with their daughter around food in childhood. Within the current situational model, I considered the variables of current family and peer dieting, as well as participants' stressors and coping styles. Importantly, this study utilized a longitudinal design in which women provided information regarding their stressful experiences and eating behaviours over the previous week for nine weeks during their first semester of university. Results showed that it is possible to evaluate short-term changes in eating behaviours, and that both the situational factors as well as developmental history contribute to the understanding of these changes. A greater number of stressful academic and interpersonal events and perceived stress were both related to increases in dietary restriction over the semester, and also to periods of emotional over-eating. Past parenting style in childhood, including excessive control or very permissive parenting, were both related to a higher occurrence of current eating problems in daughters. Parental focus on the relationship between food and weight while their daughters were children was also related to more problematic eating behaviours in adulthood. As well, the more that peers and parents dieted or encouraged dieting presently, the more likely the participant was to exhibit restrictive dieting, as well as over-eating. The findings from this study suggest that the first year of university is a time when many changes occur in women's eating behaviours, and further research on eating behaviour in this population is warranted.

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Introduction

Disordered eating is a multi-determined phenomenon with substantial individual and societal costs (Polivy & Herman, 2002). Eating disorders are most common amongst young women (Polivy & Herman, 2002), and a number of factors have been identified which may make this population more susceptible to eating disorders. For example, thinness is idealized in Western culture and societal messages and the popular media directed at young women conveys to them that the ideal female shape is slender. This may create distress in young women when they perceive that they have not met societal expectations regarding their appearance. Indeed, Polivy and Herman (1987) put forth the argument that weight concerns and dieting behaviour are so commonly engaged in that they have become the norm amongst women. Although these attitudes and behaviours are perhaps normative, they may also provide the basis of more serious eating problems in women.

Although all women are exposed to societal messages that glamourize thinness, only some develop eating disorders and sub-clinical eating problems. There may be several explanations for individual differences in problematic eating. Individuals may differ in their developmental and social backgrounds, so that for some, eating and weight issues are prominent, and for others they are not. Parents and peers may be important in their role in reinforcing or challenging cultural messages either directly or implicitly. Additionally, variations in stress and coping skills may affect some women's abilities to regulate their eating. These issues may be especially relevant for women as they enter university. Female students may arrive at university with a number of predisposing factors already in place, including how their parents regulated their behaviour in general and also specifically regarding food. As well, the first year of university is a time of novel experiences, including a potential move out of the family home, new pressures, academic demands and changing relationships. For some students, these new

experiences may be overwhelmingly stressful, and they may resort to eating as a coping mechanism or restrict food intake in an attempt to assert control over a confusing and chaotic environment.

The purpose of the present study is to evaluate the relative importance of developmental factors and situational factors in predicting the onset of unhealthy eating behaviours in university women. The Developmental History Model will include an evaluation of the role of general parenting style, parental control regarding food, and motivations to regulate eating, and how these factors impact on university women's eating during the first term of university. In contrast, the Situational Model will evaluate the importance of current life stressors and coping with those stressors, as well as current family and peer dieting behaviour. Both of these models are expected to uniquely contribute to an account of the development of eating pathology in the first term of university. Both of these models will be described in detail, following a review of the literature on eating pathology, dieting, and weight gain in university students.

Disordered Eating in University Women

Epidemiological studies suggest that approximately 1-3 % of young women meet criteria for eating disorders as defined by the DSM-III-R or DSM-IV (Fairburn & Beglin, 1990). However, many more undergraduate women experience sub-clinical levels of eating pathology (e.g., endorsing several problematic behaviours but not meeting full criteria for eating disorders) that can also negatively impact their physical health and psychological wellbeing (Cohen & Petrie, 2005). For instance, Drewnowski, Yee, Kurth, and Krahn (1994) observed in a longitudinal study of 557 college women that only 1-2 % could be diagnosed with an eating disorder, but 10 % were within the sub-clinical range and an additional 25 % were at high risk of developing an eating disorder. Similarly, Mintz and Betz (1988) evaluated the eating behaviour of 643 non-anorexic, non-obese undergraduate women and found that although 3 % could be

diagnosed with bulimia, 61 % had some form of eating disturbance such as chronic dieting, bingeing or purging alone, or sub-clinical bulimia. Remarkably, only 33 % of their sample reported what could be considered normal eating habits. These studies suggest that although rates of clinically diagnosable eating disorders are low, many undergraduate women have dysregulated eating, which may have a negative effect on both their physical and mental wellbeing. Although it seems clear that problematic eating occurs in university women, it is unclear how these behaviours develop and change during the first-year of university.

Importantly for the present study, eating dysregulation has been shown to be initiated and maintained in the university environment (Striegel-Moore, Silberstein, Frensch, & Rodin, 1989). This study examined change in factors related to disordered eating in first-year undergraduate students at the beginning and end of the academic year. Although rates of clinical bulimia did not change (3.8 % in females, 0.2 % in males), the prevalence rate of eating disorder symptoms increased significantly. For example, approximately 25 % of male and female students started dieting for the first time, and 15 % of women started binge eating for the first time during first-year. Notably, it was significantly more likely for women with no history of dieting or bingeing to report starting these behaviours by the end of first-year than it was for women who were already engaging in these behaviours to stop engaging in these behaviours during first-year. However, in a longitudinal study by Cooley and Toray (2001) eating concerns of university women were assessed during the first month of school, and every seven months for three years. In contrast to Striegel-Moore et al.'s (1989) study, Cooley and Toray (2001) found no changes in eating pathology as measured by the Restraint Scale (Herman & Mack, 1975) and the Bulimia subscale of the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983). One possible explanation for these contradictory findings is that these researchers used measures that may be less sensitive to change over time. For example, the Restraint Scale, utilized by Cooley

and Toray (2001), includes questions about eating and weight without specifying the time period under question. The Bulimia subscale also includes items which may not reflect the participant's current behaviour (such as, "I have the thought of trying to vomit in order to lose weight"). Although these measures are both ideal for measuring stable weight concerns and eating difficulties, they are less likely to detect change over time than are measures of more specific behaviours such as current dieting and bingeing.

In addition to questionnaire-based studies, researchers have also measured change in weight and lifestyle activities as an objective means of detecting eating disturbance in university students. Hovell, Mewborn, Randle, and Fowler-Johnson (1985) compared the amount of weight gained in university women to a community sample and found that university women were 2.6 to 5.2 times more likely than community women to gain 15 % or more above the ideal weight during their first year of school. However, the students' weights stabilized after first year, suggesting that the context of first year (e.g., residence in dormitories, less choice in food options) may play an important role in weight gain. Further, Butler, Black, Blue, and Gretebeck (2004) measured changes in food intake and body composition over a five-month period in university students. They found that between baseline measurement and the five-month follow-up, first-year women reduced calorie consumption but also became less physically active. Participants in this study gained a statistically significant amount of weight (approximately two pounds) and increased the fat mass on their bodies (31.97 pounds to 34.86 pounds). Similarly, Anderson, Shapiro, and Lundgren (2003) found that one-quarter of 135 freshman students gained at least 2.3 kilograms (~5.5 pounds) during first-year. Weight gain in students may be a symptom of changes in lifestyle, such as over-eating and also a lack of exercise. The present study will investigate the changes occurring in eating behaviour in first-year university students

in more detail, in an attempt to gain a clearer picture of what factors contribute to problematic eating in first-year university students.

Developmental History Model

The eating behaviour of university students may be affected by their family experiences in childhood. Parents may be an important influence in the development of eating disorders because of their general parenting style and specifically in the regulation of their child's food intake. Children may integrate their parents' attitudes and behaviours regarding food into their own value system, which could continue to influence how they regulate eating even after they leave the parental home.

Baumrind (1971) suggested that parenting could be characterized by three general styles: authoritarian, authoritative, and permissive. Authoritarian parenting is characterized as strict and rigid, with little affection. Permissive parenting involves high levels of affection but few limits are imposed on the child's behaviour. The authoritative style involves setting reasonable limits on the child's behaviour, coupled with high levels of affection. More controlling parenting, such as authoritarian parenting, has been linked with more disordered eating in the literature (Polivy & Herman, 2002). Indeed, in semi-structured interviews of women, those with eating disorders reported that their parents were more critical and controlling overall and specifically of their food intake and weight as compared to those who did not have an eating disorder (Haworth-Hoeppner, 2000). In a study of adult women, those with bulimia nervosa reported greater parental intrusiveness during adolescence (especially maternal invasion of privacy), as compared to women without bulimia nervosa (Rorty, Yager, Rossotto, & Buckwalter, 2000). We expect this pattern to continue in the present study, where more controlling parenting (in this case, authoritarian parenting) will be correlated with more problematic eating behaviours.

In contrast to the potential negative effects of parental over-control, parental support for independence may be protective for eating disorder development. In a sample of 148 female high school students between the ages of 13 and 16 years old, Strong and Huon (1998) used both self-report measures and interviews to investigate the role of social factors in the development of dieting behaviour in adolescent girls. Results showed that parental encouragement of independence was a significant predictor of less dieting behaviour. Notably, adolescents who chose to be independent but by doing so were in conflict with their parent's wishes actually perceived greater influence to diet from their parents.

Although general parenting styles may influence eating behaviour, some evidence suggests that parenting behaviours specific to eating regulation may predict the development of eating pathology. For example, in a sample of female university students who were either chronic dieters or non-dieters, the chronic dieters reported more parental dieting when they were children, and also reported that their parents were excessively controlling over their eating. Costanzo and Woody (1985) predicted that parents who are concerned with their child becoming obese would be more restrictive over food intake, regardless of their overall parenting style. Indeed, they found that chronic dieters reported that their parents were excessively controlling over their eating and were more likely to also diet themselves. Fisher and Birch (1999) elaborated upon this work, demonstrating that the more that mothers were restrictive of food intake, the more that their daughters were likely to over-indulge in snack foods when left alone. In another study, Carper, Fisher and Birch (2000) analyzed the relationship between 5-year-old girls' reports of parental control, their parents' reports of control over food, and the girls' tendency to exert restraint over food-intake or to over-eat. Surprisingly, restriction and over-eating (due to emotions or the presence of palatable food) were engaged in by a significant portion of the 5-year-olds in the sample. About 33 % of the girls reported moderate levels of

dietary restraint, 25 % reported emotional over-eating, and 75 % reported over-eating when palatable foods were present. Girls who reported greater levels of parental control over their eating were more likely to report higher levels of all three problematic eating behaviours.

The research to date demonstrates that parents have an influence on the eating patterns of their children, and also suggests that perhaps these parental influences are maintained into adulthood. However, the mechanisms by which parental control and regulation of children's eating continues to impact adult children after they leave the family home is unclear. Self-determination Theory (SDT) would suggest that these early attitudes and regulations are internalized and form the basis of current motivations toward eating. Specifically, SDT views this internalization as an issue of relative autonomy, or in other words, the willingness or volition with which one engages in behaviour. In order for individuals to engage in behaviours autonomously, they must feel that they have choice in their behaviour. When individuals feel that their behaviour is externally regulated, this diminishes their motivation to engage in that behaviour. Pelletier, Dion, Slovinec-D'Angelo, and Reid (2004) evaluated the controlled and autonomous motivations to regulate eating in an undergraduate sample, and found that more autonomous motivations were associated with healthy eating, while controlled motivations were related with symptoms of bulimia. In sample of middle-aged men and women who were at risk for coronary heart disease, individuals with more autonomous motivations to regulate their eating were more persistent in reducing fat intake and reducing their weight over a 26-week period. Motivations to regulate eating impact on eating behaviours and long-term health outcomes, suggesting that this is important to consider when evaluating eating behaviour.

According Grolnick, Deci, and Ryan (1997) parents may facilitate or undermine their child's developing autonomy. A child's sense of autonomy within the area of food consumption could have long-term effects on their health. A child whose eating behaviour is strictly controlled

by parents may learn that eating is a controlled behaviour, and this may undermine their willingness to regulate their own eating. In contrast, children who feel that they have choice in food selection, timing of eating, and so forth, may feel more intrinsically motivated to regulate their eating. For these individuals, healthy eating is more likely to become a valuable part of their self-concept and a self-regulating behaviour. On the other hand, individuals who are overly controlled in their eating will regulate their eating for external reasons, such as to lose or maintain weight or to gain approval from other people. Parental regulation of children's food intake may continue to impact adult children long after they leave the parental home due to the effect it may have on the development of motivations toward regulating eating.

In summary, dietary restraint and dysregulation may be developed early in childhood, and general parenting style or parental control over food intake may play an important role in these behaviours. Further, these early influences in development may continue to have an effect into adulthood as these attitudes and regulations are internalized into motivations to regulate eating. The present study will build upon this work by examining whether adult children's perceptions of parental control over eating in childhood is related to their present eating behaviour, mediated by autonomous motivation.

The Situational Model

In addition to the role of early developmental factors on eating behaviour, current life events also play a part in the development of eating pathology. That is, family and peers may directly influence students' engagement in current eating behaviour, and coping with current stressors may also impact their eating behaviour.

Current parent and peer behaviours, such as encouragement and direct instruction to lose weight may be risk factors for the development of eating pathology. For example, in a longitudinal study conducted by Agras, Bryson, Hammer, and Kraemer (2007), parent and peer

encouragement to lose weight were risk factors for the development of weight and shape concerns in 11-year-old girls.

Peers have also been shown to be a factor in the development of eating-disorder symptoms in later adolescence and early adulthood. For example, Zalta and Keel (2006) found college students are more similar to their peers in bulimia symptoms during the school year when they spend time with those peers. However, when away from these peers during the summer term, the similarity in bulimia symptoms between friends decreased. The present state of research suggests that both family and peer environments may confer a risk for developing and maintaining dysregulated eating in young adults.

In addition to direct social influences on eating behaviour, current life stressors and coping with these stressors may create more problematic eating in university students. Some evidence has suggested that normal life stressors such as changing jobs, interpersonal relationships, and parental divorce can precipitate eating disorders in some individuals (Bennett & Cooper, 1999; Schmidt, Tiller, Blanchard, Andrews, & Treasure, 1997). Indeed, according to Schmidt et al. (1997), stressful life events precede the onset of eating disorders in 76 % of all cases.

Various research findings provide support for the notion that stress is the causal agent in changes in eating behaviours, rather than stress being an outcome of eating problems. For example, in a survey of undergraduates, Zellner et al. (2006) found that 46 % of women and 17 % of men reported overeating when stressed, while 37 % of women and 54 % of men reported under-eating when stressed. Oliver and Wardle (1999) suggest that women's normative concerns with weight and dieting lead them to strictly regulate food intake under normal circumstances, and this tenuous control is broken during periods of stress. In this study, women reported eating

more snack foods, such as sweets, while simultaneously decreasing their consumption of fruits and vegetables when they were stressed.

Several studies have found a relationship between over-eating and stress for chronic dieters as well as for a large proportion of the general population. For example, Polivy and Herman (1999) tested several hypotheses for why individuals may over-eat during periods of stress. They found that dieters eat when they are distressed as a temporary distraction from negative emotions or cognitions, to re-direct their dysphoria towards their eating rather than toward the true cause of their unhappiness (masking), and because they feel that their diet is hopeless when they are distressed. Zellner et al. (2006) also found that 73 % of participants who overeat when stressed said that they eat foods that they normally avoid, such as sweet foods (chocolate was most common), and other junk foods. Approximately half of these participants selected foods that make them feel better. Thus, there is a link between stress and over-eating, especially for individuals who generally restrict their food intake. Based on this research, it may be expected that university students who chronically diet may also engage in more dysregulated eating, especially during periods of stress.

However, the presence of stress itself may not account for the development of dysregulated eating. Indeed, those who are able to respond adaptively to stress may reduce the negative emotional impact of the stressor on their functioning (Bennett and Cooper, 1999), potentially also reducing the likelihood of developing problematic eating. Folkman and Lazarus (1988) distinguished between three types of coping, known as problem-focused coping, emotion-focused coping, and avoidance. Problem-focused coping consists of behaviours such as confronting the problem and problem solving, and is generally considered to be the most effective method of coping. Emotion-focused coping may consist of a variety of behaviours that concern the emotional response to the stressor, such as distancing from the problem or

reappraising the problem in a positive way. Avoidance involves engagement in passive activities such as wishing the problem would go away or distracting the self. Avoidance is generally considered to be the least effective method of coping because the problem is not solved and in fact may become worse. Although problem-focused coping is most related to adaptive functioning, each coping strategy may be adaptive if applied in the appropriate situations (Folkman & Lazarus, 1988). Thus, some individuals may deal inadequately with stress, either because they do not utilize certain coping strategies, or because they do not implement the optimal strategies for certain situations. Further, people who have a limited range of coping strategies, and those who fail to select appropriate coping strategies based on situational factors, may experience greater difficulties in dealing with their stressors.

Bennett and Cooper (1999) have suggested that individuals with eating disorders may have difficulty anticipating stressful situations and deciding which strategies to use to cope with future stressors. They may therefore actually experience more stress than other people when faced with common life stressors, especially if they frequently engage in avoidant coping. Findings from laboratory studies have indicated that eating-disordered individuals may also perceive greater stress in their environment, and may feel less capable of dealing with stress. For example, Hansel and Wittrock (1997) found that female undergraduates who regularly binge-eat appraised both laboratory and natural environmental stressors as more stressful than participants who did not regularly binge-eat. Further research has shown that it is not that individuals with problematic eating differ in their physiological responses to stress, but rather their perception of stress is different. For example, in a study conducted by Cattanach, Malley, and Rodin (1988), undergraduate women classified as either high or low in eating disorder status were subjected to a variety of difficult tasks. The two groups did not differ on physiological measures, such as blood pressure and heart rate, while they completed the stressful activities. However, individuals

high in eating-disorder status reported an increased desire to binge following these tasks, as well as lower self-esteem, lower mastery, and higher perceived stress. Similarly, Tuschen-Caffier and Vogele (1999) found no differences in physiological activation between bulimia nervosa patients, restrained eaters, and controls when they completed stressful tasks. However, bulimic patients reported an increased desire to binge in response to the stressor. People who perceive greater stress in their environment, whether due to objectively high stress levels or perceived stress, are expected to be at higher risk for developing disordered eating.

Maladaptive coping has been linked to eating pathology, particularly in the overuse of avoidant coping (Mayhew & Edelmann, 1989; Troop et al., 1994). For example, Mayhew and Edelmann (1989) found that undergraduate females who demonstrated a higher level of disordered eating on the Eating Disorders Inventory (EDI) were also more likely to report using avoidant coping strategies than problem-focused coping strategies. These investigators suggested that women with eating disorders may not have a full repertoire of coping skills available, or they may not be able to effectively implement all of their coping strategies. In either case, the individual has limited resources for dealing with difficult stressors, and resorts to maladaptive eating behaviours in an attempt to manage their emotions. Troop et al. (1994) also found that anorexia and bulimia patients both used more avoidant strategies than control subjects. Importantly, patients and controls did not differ in their use of problem-focused coping, suggesting that individuals with eating disorders employ disproportionately more avoidant strategies than other people, rather than less problem-focused coping.

In sum, these studies suggest that those with eating disorders may perceive their stressors to be more difficult than individuals without eating disorders, and also fail to implement appropriate coping strategies. Given the importance of stressors and coping strategies in the development of problematic eating, it becomes apparent that university students may be

particularly vulnerable given the novel stressful environment with which they are confronted in their first term. First year students may experience many new responsibilities, more demanding academic material, new social circles, and greater independence. A greater number of stressors, or the perception of these stressors as being overwhelming, may predict eating pathology in some students. For individuals with inadequate coping mechanisms, a focus on their eating may provide temporary relief from anxieties about their problems and may serve as a way to gain control over an environment that is foreign, confusing, and uncontrollable. Prior research has not examined fluctuations of problematic eating behaviours in the critical period of the first year of university. Thus, using a weekly diary design, the present study will investigate the evolution of problematic eating behaviours during the first term of university, when students are expected to be most sensitive to stress, and perhaps less skilled at coping with many novel situations.

The Present Study

The present study examines the unique contributions of both developmental history as well as current stressors in the occurrence of eating pathology in university women. In the present study, first-year university women completed an initial questionnaire package at Week 1 that assessed past parenting, peer influences, and stressors, coping, and eating behaviour over the previous week. Ninety participants from this original sample continued with the longitudinal portion of the study, completing weekly measures on stress, coping, and eating over the previous week once per week for eight weeks following Week 1.

The following hypotheses test the developmental model, the situational model, as well as the change process using these two models as predictors.

Testing the Developmental History Model

1. More controlling parenting, both in general and regarding food in childhood, will be related to a higher occurrence of problematic eating.

2. The influence of parental control on current eating behaviour will be mediated through the participants' motivation to regulate eating behaviour.

Testing the Situational Model

3. Current family weight concern and dieting will be related to current problematic eating. As well, current peer dieting and weight concerns will also be linked with current problematic eating.
4. Participants who experience a greater number of stressors, and also perceive a higher intensity of stress, will experience more eating problems at baseline.

Evaluating the Process of Change in Eating Behaviours

5. Early parental control in general and control over food in particular will predict an increase in problematic eating behaviour between Week 1 and Week 9 because participants with these backgrounds will be unprepared to handle self-regulation of food intake.
6. Objective stress and perceived stress will both predict an increase in problematic eating behaviours between Week 1 and Week 9.
7. Coping will moderate the effect of stress on eating behaviour. Specifically, effective coping will mitigate the effect of stressful experiences, and less effective forms of coping will exacerbate the effects of stress.
8. As there is no literature to expect otherwise, we expect that a simple linear pattern of change will best describe overall change in eating patterns and stress over the course of the semester. There will also be individual differences in the linear trajectories, in that some participants will experience an increase in these variables over the semester, whereas others will experience a decrease.
9. Parenting (in general and related to child feeding), and current family and peer weight concerns will be used to predict the patterns of linear change in eating behaviour over the

semester. We predict that stress will be most predictive of these patterns of change, followed by current peer dieting, and parenting variables.

10. In addition to predicting change in eating behaviour over the semester, weekly fluctuations in stress will also have an influence on changes in eating behaviours. Stress is expected to have a time-lagged effect, in that more dysregulated eating is expected in weeks where stress levels are higher, and also in the week following a stressful week.

Method

Participants and Procedure

This study was presented to participants as an examination of the relationship between stress, coping, and eating patterns in first-year university women. One hundred thirty-seven first-year female undergraduate students from participant pools in the psychology department were recruited for participation in this study. Ninety received research credits toward their psychology class and 47 were paid one movie ticket for their participation. The mean age of the total sample of 137 subjects was 18.5 years (range: 16 – 24 years). The mean weight was 130.5 lbs (range 86 – 260 lbs; s.d. 27.3) and the mean Body Mass Index (BMI) was 22.0 (range 16.1 – 39.7; s.d. 4.2). The sample represented a diverse range of body sizes, with 19 (13.9 %) participants classified as underweight (BMI $\leq$ 18.5), 19 (13.9 %) participants classified as overweight or obese (BMI $\geq$ 25), and 97 participants (70.8 %) within the normal BMI range (18.5 - 24.9). Two participants did not supply weight information. Participants also represent a diverse range of ethnic backgrounds, and they self-identified as White (48.2 %), Asian (43.1 %), Black (2.2%), South American (2.2 %), Other (2.9 %), and undisclosed (1.5 %). All participants completed a questionnaire package in the laboratory which included measures of eating pathology, parents' parenting style in general, parental control of food in childhood, current family and friend dieting behaviour, stressors and coping strategies over the past week, and

eating behaviours over the past week. The 90 participants from the psychology credit pool were invited to participate in the online longitudinal component of this study.

The longitudinal portion of the study consisted of a 15-minute online survey at the end of each week for the following eight weeks, consisting of a checklist of stressors, a perceived stress rating, a domain-specific coping measure, and a measure of eating behaviour over the previous week. Participants received ½ research credit for every two online sessions they completed. As an additional incentive, participants also received entries into draws to win prizes (cash, movie tickets, an iPodShuffle) every time they completed an online questionnaire. Participants who completed the final session (Week 9) also received a movie ticket. All psychology participants who attended the laboratory study consented to participate in the longitudinal portion, with 11 participants (12 %) dropping out before or at the fifth week. On average, each week 71 participants (79 % of the sample) completed the online questionnaires, with 42 (46 %) completing all eight online questionnaires.

Eating and Body Image Measures

Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983). This 64-item scale is composed of eight subscales, which measure various psychological and behavioural traits often associated with eating disorders. Participants responded to each item on a 6-point Likert scale ranging from 'never' (1) to 'always' (6). The three subscales called Drive for Thinness, Body Dissatisfaction, and Bulimia were used in this study to validate the newly developed Weekly Eating Behaviours Scale (WEBS). Sample items from these subscales are, "I am preoccupied with the desire to be thinner" (Drive for Thinness), "I think that my stomach is too big" (Body Dissatisfaction), and "I stuff myself with food" (Bulimia). These subscales achieved strong reliability coefficients when administered to the 137 participants in the current study [Drive for Thinness (a = .90), Body Dissatisfaction, (a = .91), and Bulimia (a = .86)]. The EDI

subscales are usually calculated by eliminating the three lowest response options, because individuals with eating disorders do not often endorse these responses. However, because the sample was a non-clinical population, we used untransformed scores to calculate each subscale index, as recommended by Shoemaker, van Strien, and van der Staak (1994), to retain the full range of scores and more diversity in the range of scores. Higher scores on Drive for Thinness represents a greater desire to have a thin body shape, higher scores on Body Dissatisfaction indicates greater dissatisfaction with various body parts appearing too large or fat, and higher scores on the Bulimia subscale indicate a greater tendency to engage in either bingeing or purging, or to consider using these more extreme methods to lose weight.

Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987) is a self-report measure of dissatisfaction with body shape and weight. Participants were asked to consider how they have been feeling about their appearance over the past four weeks, and they responded to each of the 34 items on a 6-point Likert scale, ranging from 'never' (1) to 'always' (6). Sample items on this scale are, "Has feeling bored made you brood about your shape?" and, "Has eating even a small amount of food made you feel fat?" The items are summed to calculate a total score, and higher scores indicate more pathological concern with body shape. The BSQ correlates soundly with the Body Dissatisfaction subscale of the EDI ($r = 0.66$). Higher scores on the BSQ are related to disordered eating behaviour, and it reliably discriminates between patients with bulimia and non-disordered women (Cooper, et al., 1987).

Weekly Eating Behaviours Scale (WEBS; Boyd, Woody, & La Guardia). This scale was developed for the current study to assess participants' eating patterns over the previous week. The rationale for developing this scale was to study specific eating behaviours that could potentially change over a short time period, without incorporating attitudes toward weight, shape, and eating into the items, as these more persistent attitudes would not be expected change

over a short time period. Five items within six domains were generated, including Restriction, Dysregulation, Irregular Eating, Healthy Eating, Social Eating, and Compensation. Sample items within each domain include, "Skipped a meal to reduce caloric intake" (Restriction), "Ate a large quantity of food with little awareness that you were eating so much" (Dysregulation), "Ate food straight out of a container because you were in a rush," (Irregular Eating), "Ate fresh fruit and/or vegetables as snacks," (Healthy Eating), "Ate food at a party with a group of friends or family," (Social Eating), and "Exercised until a goal number of calories were burned" (Compensation). These six domains were expected to capture a range of different eating behaviours, which could potentially change over the short-term, and include a range of different types of eating behaviours. Participants were instructed to rate on a 5-point Likert scale the number of times they engaged in each type of behaviour over the previous seven days. The rating options ranged from 'not at all this week' (1) to 'everyday' (5). Factor analytic results and correlations with three EDI subscales (Drive for Thinness, Bulimia, and Body Dissatisfaction) and the BSQ are presented in the results section.

Developmental History Measures

Parental Authority Questionnaire (PAQ; Buri, 1991). This scale is designed to measure Baumrind's (1971) conceptualization of authoritarian, authoritative, and permissive parenting styles. This scale consists of 30 items, which were designed to assess adults' memories of their parents' behaviour while they were children. The same 30 items were administered regarding both fathers and mothers, providing a separate assessment of parenting style for each parent. Responses were made on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). Sample items measuring fathers' parenting styles are, "As I was growing up my father often told me exactly what he wanted me to do and how he expected me to do it" (Authoritarian); "As I was growing up, if my father made a decision in the family that hurt me,

he was willing to discuss that decision with me and to admit it if he had made a mistake" (Authoritative); and "As I was growing up my father did not direct the behaviours, activities, and desires of the children in the family" (Permissive). In the full sample of 137 participants, the reliability coefficients were acceptable [Mother Permissiveness (a = .86), Mother Authoritarianism (a = .87), Mother Authoritativeness (a = .87), Father Permissiveness (a = .80), Father Authoritarianism (a = .91), and Father Authoritativeness (a = .88)]. Intra-correlations between ratings of mothers and fathers on their parenting styles (e.g., between mother authoritarianism and father authoritarianism), showed small to moderate correlations (r's < .54), suggesting that mother and father parenting measures should be considered separately in subsequent analyses with this scale.

Adapted Child Feeding Questionnaire (Adapted from the original Child Feeding Questionnaire (CFQ); Birch, Fisher, Grimm-Thomas, Markey, Sawyer, & Johnson, 2001). This self-report measure was designed to assess parents' beliefs and practices regarding their child's eating. The original scale consists of seven factors, four of which assess parental beliefs about their child's obesity proneness and three assessing parental behaviours. This scale was adapted for the present study so that university students could complete it regarding how their parents managed their food intake when they were children living in the family home. Three factors assessing parental beliefs about food were eliminated because it was expected that students would not have adequate knowledge about their parents' beliefs when they were children to rate these factors meaningfully. The only parental beliefs factor that was included in the present study assesses parental concern with the child's weight. Three additional items were also added to this scale to measure parental encouragement of healthy eating behaviours. These items include, "Your parents did not permit unhealthy snacks or junk food to be eaten in their house," "Your parents ensured that you had a variety of foods available to you," and "Your parents

provided you with a well-balanced diet, which occasionally included candy or snacks." Items were rated on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). Scale refinement is discussed further in the results section.

Regulation of Eating Behavior Scale (REBS; Pelletier, Dion, Slovinec-D'Angelo, & Reid, 2004). This self-report measure assesses individual's autonomous and controlled motivations to regulate their eating behaviours. This scale consists of 24-items on six factors, which have acceptable reliability [intrinsic motivation (a = .86), integrated regulation (a = .83), identified regulation (a = .73), introjected regulation (a = .72), external regulation (a = .83), and amotivation (a = .82)]. Items were rated on a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). The Relative Autonomy Index (RAI) is calculated given these six factors: [intrinsic motivation(3) + integrated regulation(2) + identified regulation(1) + introjected regulation(-1) + external regulation(-2) + amotivation(-1)]. Participants with higher RAIs would be expected to be more autonomously motivated to regulate their eating and those with lower RAIs would be more controlled and pressured in their regulation of eating.

Situational Model Measures

Current Family Weight Concerns (Boyd, La Guardia, & Woody). In order to assess family members' current dieting behaviours and concern with their own weight, it was necessary to develop a new scale. Five questions were developed for each family member (mother, father, and closest age sibling), assessing several factors relevant to dieting and weight concerns. These questions addressed the extent to which each family member considers it acceptable for themselves to be overweight, has concerns with their own weight, considers it important to be thin, wants to be physically attractive to others, and experiences weight fluctuations. Participants completed these items using a 7-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). Finally, an item assessing commitment to dieting was completed regarding

each family member (mother, father, and sibling). Participants rated whether each family member either 'did not diet' (0) or 'dieted' (1). If family members did engage in dieting, participants then rated that family member's commitment to dieting on a four-point Likert scale ranging from 'not at all committed' (1) to 'strongly committed' (4). Scale refinement is discussed further in the results section.

Family Encouragement to Diet (Boyd, La Guardia, & Woody, 2006). Two questions assessed current direct family pressures on the participant to diet. The first question assessed perceived approval for engaging in dieting (for e.g., "Do you feel that your mother would approve of you dieting to lose weight?"), to which participants responded on a 3-point scale with the options of 0 (No), 1 (Maybe), and 2 (Yes). The second question assessed direct instructions to the participant to diet (for e.g., "Has your father told you that you should diet to lose weight?") to which participants responded on a four-point scale consisting of the options, 0 (never), 1 (once or twice) 2 (several times), and 3 (frequently). Participants completed these two questions for each family member (mother, father, and closest age sibling). Rather than analyzing each of these items separately given the high correlations between some of the items (*r*'s between .27 and .81), they were pooled to create a subscale labeled Family Encouragement to Diet (a = .85).

Current Peer Weight Concerns (Boyd, La Guardia, & Woody, 2006). Five questions addressed current peer weight and dieting concerns. These questions assessed whether the participants' friends diet, how committed their friends are to dieting, the proportion of friends dieting at least once in the last year, and peer encouragement and approval of dieting. Ratings for each item were standardized and then summed to create an index of peer weight concerns. This index achieved acceptable reliability (a = .64). Higher scores on this scale indicate greater peer influence to engage in dieting behaviours.

Objective Stress. Participants rated a list of 94 potentially stressful events each week, some which were selected from the Psychiatric Epidemiology Research Interview (PERI) Life Events Scale (Dohrenwend, Krasnoff, Askenasy, & Dohrenwend, 1978) and modified to apply to university students, and additional events relevant to university students were generated by the investigators. The selected items were divided into the four domains of Academic, Social/Friendship, Family, and Romantic stressors, as these were thought to be the domains most relevant to university students and would allow assessment of whether certain domains of stressors may be more predictive of disordered eating than others. Sample weekly stressor items within the four domains included, "Worried about failing one or more courses," (Academic), "Missed a friend or friends because of long-distance," (Social/Friendship) "Had an argument with parent or parents," (Family) and "You were too busy to spend as much time with your partner as you want" (Romantic). Participants completed checklists of stressors within each domain at the end of each week.

A numerical value indicating the severity of each stressor item was assigned, using the ratings of these items provided by an additional sample of 42 first-year undergraduate students. These students completed an online questionnaire in which they rated how stressful each event would be if it occurred during their first year of university, ranging on a 7-point Likert scale from 'not at all stressful' (1) to 'most stressful experience I would expect to have in my life' (7). The mean rating for each item obtained from this sample was assigned to that item. The mean severity ratings ranged between a low of 2.65 (e.g., "*You entered a new relationship with a romantic partner*") and a high of 6.73 (e.g. "*A member of your family died*"). According to this schema, the most stressful item was approximately 2.5 times more stressful than the least stressful item. In order to increase the discrepancy in mean scores between low stress items and high stress items, the scores were transformed by subtracting 1.65 from all of the scores and

rounding the resulting numbers up to one decimal place. The final range of scores ranged from a low mean score of 1.0 to a high mean score of 5.2, meaning that the most stressful item was approximately five times more stressful than the least stressful item. The numerical values assigned to each stressor endorsed by participants each week were summed to create an Objective Stress Index. A Cumulative Objective Stress Index was calculated by averaging all of the Objective Stress indices for each week. Of the nine-week study, a minimum of five weeks worth of measures was required to calculate this index.

Perceived Stress. At the end of each of the four domains of stressors (Academic, Social/Friendship, Family, and Romantic), participants rated how stressful each domain was over the previous seven days. These ratings were completed on a 5-point Likert-scale ranging from 'not very stressful' (1) to 'extremely stressful' (5). A Perceived Stress score was calculated for each week by summing the perceived stress scores across the four domains, such that a score of 4 would indicate no stress at all in the previous week, whereas a score of 20 would indicate the highest possible level of perceived stress over the previous week. As well, a Cumulative Perceived Stress score was calculated by averaging all of Perceived Stress scores across the nine weeks provided the participant completed a minimum of five weeks worth of measures.

Coping. Participants completed a coping measure assessing their coping in each of the four domains (academic, social/friendship, family, and romantic) over the previous week. The sixteen items on this scale were taken from the Brief Cope (Carver, 1997) and consisted of one item each from the Active Coping scale ("I've been concentrating my efforts on doing something about the situation I'm in"), the Planning scale ("I've been trying to come up with a strategy about what to do"), the Emotional Support scale ("I've been getting emotional support from others") and the Instrumental Support subscale ("I've been trying to get advice or help from other people about what to do"). Each of the following subscales are composed of two items

each, and both were included in the current study: Acceptance, Humor, Self-Distraction, Venting, Denial, and Self-Blame. Each week participants rated how often they used each of the coping strategies to deal with stress in each of the four domains. They rated the frequency of use on a 5-point Likert scale ranging from 1 (not at all) to 5 (most or all of the time).

The same population of 42 participants who rated the severity of the stressors also completed a measure assessing the effectiveness of the 16 coping strategies within each of the four domains. The objective was to assign numerical ratings to each of the coping strategies within each domain, which would provide an estimate of how effective each coping strategy is expected to be in different domains by undergraduate students. In fact, the results showed that participants did not assign differential effectiveness ratings to coping strategies utilized in different domains. The mean effectiveness ratings for each coping item across the domains were very similar, and so we clustered coping strategies across domains and explored alternative methods of analyzing the coping data.

The 16 items were subsequently divided into four types of coping by the authors, problem-focused coping, avoidance, positive emotion-focused coping, and negative emotion-focused coping. Similar to findings in the previous literature, problem-focused coping includes solving the problem and planning. Avoidance includes denial and engaging in alternative behaviours to distract from the stressors. Positive emotion-focused coping consists of using acceptance and humour to cope with the stressors, as these were expected to help the individual regulate their emotions, but does not actively solve the problem. Negative emotion-focused coping consists of using venting and self-blame, behaviours that will not improve the situation and may also have a negative effect on the individual's emotional functioning. Notably, the inclusion of two types of emotion-focused coping is a departure from the general notion of emotion-focused coping as a single entity. When assessing the 137 participants at Week 1, the

factors showed adequate reliability [Problem-focused (a = .89), positive emotion-focused (a = .89), negative emotion-focused (a = .91), and avoidant (a = .85)]. Notably, as analyses illustrated that participants tended to be highly consistent in their use of each coping across the nine weeks of the study, we decided to use coping as a stable, dispositional variable, rather than as a time-varying variable.

Results

Construct Validation and Factor Structure of Scales

The Weekly Eating Behaviours Scale (WEBS). The original 31 items of the WEBS was subjected to principal axis factor analysis with promax rotation, restricted to six factors. Items were not retained on a factor if their factor loadings were not face valid or if they significantly reduced the reliability of the scale, leading to three items being dropped. The final scale consists of factors measuring Restriction, Dysregulation, Irregular Eating, Healthy Eating, Social Eating, and Compensation. We focus only on the first four factors to test the relevant hypotheses in this study (see Table 1). The Restriction subscale consists of 8-items (factor loadings > .29) that tap skipping meals, keeping a food record, and avoidance of eating in social settings. The Irregular Eating subscale consists of 5 items (factor loadings > .42) that assess the tendency to miss meals or eat fast foods because the person is too busy. The Dysregulation subscale included 6-items (factor loadings > .33) that assess overeating. Finally, the Healthy Eating subscale measures the tendency to eat meals regularly and select foods from a variety of food groups (factor loadings >.40). Each of the four scales showed adequate reliability [Dysregulation, a = .77; Restriction, a = .81; Irregular Eating, a = .77; Healthy Eating, a = .68]. The four subscales showed moderate correlations with each other (r's between .01 and .45), indicating that these eating behaviours are related but not overlapping constructs (Table 2).

In order to establish construct validity of the newly derived WEBS scales, the Body Shape Questionnaire (BSQ) as well as the Drive for Thinness, Bulimia, and Body Dissatisfaction subscales of the Eating Disorder Inventory (EDI) were correlated with the WEBS subscales. Greater restriction was associated with greater body shape dissatisfaction as measured by the BSQ ($r = .62$, $p < .001$), and greater drive for thinness ($r = .63$, $p < .001$), greater tendency toward bulimic behaviour ($r = .49$, $p < .001$), and greater overall body dissatisfaction ($r = .42$, $p < .001$) as measured by the EDI. Further, the more people tend to engage in emotional overeating (dysregulation) the greater their body shape dissatisfaction as measured by the BSQ ($r = .56$, $p < .001$), and the greater their drive for thinness ($r = .49$, $p < .001$), tendency to endorse bulimic behaviour ($r = .79$, $p < .001$), and body dissatisfaction ($r = .39$, $p < .001$) as measured by the EDI. More irregular eating (e.g., missing meals) was associated with greater body dissatisfaction (BSQ; $r = .35$, $p < .001$), as well as greater drive for thinness ($r = .26$, $p < .01$), greater tendency toward bulimic behaviours ($r = .40$, $p < .001$), and greater body dissatisfaction ($r = .18$, $p < .05$) as measured by the EDI. Finally, healthy eating was not significantly related to the BSQ or the EDI indices. Importantly, these results suggest that the WEBS measure is comparable to well-established measures of dysregulated eating and body image, while affording the additional advantages of measuring both healthy and dysregulated eating behaviours which could fluctuate over short periods of time.

The Adapted Child Feeding Questionnaire (CFQ-Adapted). Using data from 137 participants at baseline, we examined the factor structure of the Child Feeding Questionnaire (CFQ-adapted), as this measure was modified for the current study. This scale was subjected to principal axis factor analysis with a promax rotation (Table 3). Six factors with eigenvalues greater than 1 emerged, and these factors explained 58 % of the variance. The factors that emerged were similar to those of the original scale, with the exception of the Restriction factor,

which decomposed into three smaller factors tapping restriction of sweets, regulation of the amount of food consumed, and the use of food to reward good behaviour. Each subscale showed adequate reliability of the items [Regulating intake, *a* = .78; Restricting sweets, *a* = .86; Concern about child's weight, *a* = .79; Pressure to eat more, *a* = .71; Encouragement of healthy eating, *a* = .66; Rewarding good behaviour with food, *a* = .80]. Similar to the original scale, correlations between the factors were small to moderate (*r*'s between .01 and .46), indicating that these subscales represent fairly distinct clusters of parental behaviours and attitudes toward child feeding.

Current Family Weight Concern Scale. These newly developed items were subjected to a principal axis factor analysis with promax rotation and five factors emerged (factor eigenvalues > 1), explaining 58 % of the variance (Table 4). The first three factors were divided by target of focus (mother, father, and sibling), with items tapping concern about weight, importance of thinness, and importance of physical attractiveness. The fourth factor captured how accepting the family member is of themselves being overweight or becoming overweight and the fifth factor captured weight fluctuations for the family members. While items regarding weight fluctuations clustered on a separate factor, the items specific to each family member were added to the corresponding factor for each family member. This decision was made because the weight focus subscales will be affected the target's dieting behaviour and fluctuations in weight. Correlations between the family target factors were small to moderate (*r*'s < .40), indicating that although weight concerns and dieting co-vary within family units, the influence of targets should be considered separately rather than as a family group. Commitment to dieting was assessed for each family member (mother, father, and sibling). This item consisted of the question, "Does your mother/father/sibling diet?" to which participants responded "yes" or "no". If "yes" then participants were asked to rate the family member's level of commitment to dieting, with the

options of "not at all committed," "somewhat committed," "very committed," and "strongly committed." If participants chose the response, "no" this was considered to be "no dieting behaviour," making this a 5-point scale. These items were also converted to z-scores so that each family member's dieting commitment could be added to the factor for each family member, because high levels of commitment to dieting is consistent with high levels of concern with weight and appearance. The reliability estimates for each of these four resulting scales were acceptable [Mother Weight Focus (a = .74), Father Weight Focus (a = .70), Sibling Weight Focus (a = .74) and Family Weight Acceptance (a = .61)]. Mother Weight Focus, Father Weight Focus, and Sibling Weight Focus are all moderately intra-correlated (r's between .35 and .43) (Table 5). This supports the view that weight concerns and dieting tend to occur more within family units.

Preliminary Analyses

I assessed the relations of the developmental factors to each other using Pearson correlations. First, assessing the relations to general parenting styles in mothers, results showed that the more authoritarian mothers were, the more they pressured their children to eat (r = .35, p < .01). Further, the more authoritative mothers were, the less they pressured their children to eat (r = -.20, p < .05) and the more they encouraged healthy eating (r = .39, p < .01), while the more permissive mothers were, the less they pressured their child to eat (r = -.35, p < .01). With regard to fathers, the more authoritative fathers were, the more they encouraged healthy eating (r = .19, p < .05), while the more permissive they were, the less they pressured their children to eat (r = -.18, p < .05).

Assessing family attitudes toward weight and dieting, the more mothers focused on their own weight, the more concern they expressed of their child's weight (r = .26, p < .01) and the more restrictive they were of their children's intake of sweets (r = .24, p < .01). Further, the

more the collective family encouraged the child to diet, the more that the parents expressed concerns about the child's weight ($r = .61$, $p < .01$) and the more that they regulated the child's food intake ($r = .21$, $p < .05$).

Developmental Model

First, I correlated the four current eating behaviors (dysregulation, restriction, irregular eating, and healthy eating) with measures of general parenting and parenting specifically with respect to food (Table 6). Results showed that greater mother authoritarianism was associated with greater restriction ($r = .23$, $p < .01$) and dysregulated eating ($r = .18$, $p < .05$) in their daughters. In contrast, greater mother authoritativeness was associated with less restrictive eating ($r = -.18$, $p < .05$). Further, more permissive parenting by fathers was related to higher level of dysregulated eating (emotional overeating) in their daughters ($r = .22$, $p < .05$). Next, regarding specific regulation of their daughters' eating, greater parental concern with their daughter's weight when she was growing up predicted greater current dysregulated eating ($r = .24$, $p < .01$), irregular eating ($r = .19$, $p < .05$), and restriction ($r = .21$, $p < .05$) in their daughters (Table 7). Further, the more parents regulated their daughter's food intake when she was a child, the more their daughter currently engaged in restrictive eating ($r = .19$, $p < .05$). In contrast, the more that parents encouraged healthy eating and restricted their daughter's intake of treats, the more their daughters engage in current healthy eating behaviors ($r = .30$, $p < .01$; $r = .17$, $p < .05$, respectively).

Next, to assess a potential mechanism by which these parental behaviors influence their daughters' current eating behaviors, I tested current motivations to eat as the mediator of this relationship. In an attempt to explain why parental feeding behaviours influence participants' current eating behaviours I tested motivation as a mediator of this effect. Please refer to Figure 1 for an explanation of tests of mediation. Statistically, to show the mediation effect, parental

feeding behaviours must predict current eating behaviours [Path C], parental feeding behaviour must be significantly related to motivation to regulate eating [Path A], and current eating behaviour must be significantly related to motivation to regulate eating when simultaneously regressed with parental feeding behaviour [Path B] and the path between eating behaviour and parental feeding behaviour must be reduced significantly when motivation to regulate eating is simultaneously considered in the regression equation [Path C] (Figure 1). In the present study, four mediation effects were significant (Figure 2 and Table 9). In the first example, I found that parental concern about child's weight predicted motivation to regulate eating (Path A; ß = -.31, $p < .01$), current dysregulated eating (Path C; ß = 24, $p < .01$), and motivation to regulate eating predicted dysregulated eating (Path B; ß = -.35, $p < .001$). Further, when considered simultaneously as predictors of dysregulated control, motivation emerged as a mediator of the effect of parental behaviours on current eating behaviours (path C'; reduced to ß = .13, n.s.). This suggests that controlled motivations mediate the relationship between parental concern about weight and the participants' current dysregulated eating. Controlled motivations toward eating regulation in adulthood also significantly mediated the relationship between parental concerns about weight and irregular eating. Additionally, higher autonomy significantly mediated the relationship between parent's encouraging healthy eating and less irregular eating and also healthier eating. These mediation effects suggest that part of the reason why parental behaviours affects participants' current eating behaviour is through the effect of parental behaviours on the child's motivation to regulate eating behaviours.

Situational Model

First, I assessed the relations of family and peer concerns with weight and encouragement of the participant to diet with current problematic eating behaviours (dysregulated eating, restrictive dieting, and irregular eating). Parents' current concerns with their own weight and

dieting behaviour were actually unrelated to student's current eating patterns (Table 8). However, the more concerned siblings are with their own weight, the less healthy eating the women engage in currently (r = -.25, p < .01). The more family members are accepting of themselves being overweight, the more likely the participant engaged in excessive dieting (restriction) (r = .34, p < .01). Finally, the more family members encouraged the participant to diet, the more the women engaged in emotional over-eating (r = .17, p < .05) and restrictive dieting (r = .20, p < .05). With regard to peers, the more concerned with weight that peers are, the more participants engaged in dysregulated eating (r = .28, p < .01), irregular eating (r = .26, p < .01), and restrictive dieting (r = .33, p <. 01).

Next I assessed the role of general life stressors in the development of current problematic eating. In the present study, there was a moderately strong relationship between Objective Stress and Perceived Stress at Week 1 (r = .67, p > .001), suggesting that the level of stress perceived by participants is reasonably in line with the objective severity of the stressors.

The more severe the stressors a participant experienced during Week 1, the more they engaged in emotional over-eating (r = .25, p < .01), restrictive dieting (r = .25, p < .01), and irregular eating patterns because of a busy schedule (r = .50, p < .01). Objective stress was unrelated to whether participants engaged in healthy eating (r = .07, n.s.). The more stressed participants felt about the events of their week, the more they engaged in emotional over-eating (r = .24, p < .01), restrictive dieting (r = .19, p < .05), irregular eating (r = .35, p < .05) and healthy eating (r = .25, p < .01).

Assessing change between Week 1 and Week 9

In addition to the potential influence of parenting on participant's initial eating status when they first arrive at university, parental influences could continue to exert an influence throughout the semester because students have internalized these behaviours and attitudes.

Therefore, the next analyses we conducted was to examine whether parental control in general and around food specifically effects change in eating behaviours between Week 1 and Week 9. Using partial correlations, controlling for each relevant baseline eating behaviour (e.g., Week 9 restriction controlling for Week 1 restriction), we examined the change that occurred in each eating behaviour as predicted by general parenting style. More permissive mothering predicted an increase over the semester in both dysregulated eating ($r = .25$, $p < .05$) and irregular eating ($r = .30$, $p < .05$), while more authoritative mothering predicted an increase in irregular eating ($r = .31$, $p < .05$). More authoritarian fathering was associated with an increase in restrictive eating increases over the semester ($r = .34$, $p < .01$), while the more authoritative the father is, the less participants' engaged in restrictive ($r = -.25$, $p < .05$) and dysregulated ($r = - .25$, $p < .05$) eating behaviours. These findings suggest that each parent may have different influences on their child's eating behaviour, and also that different parenting styles can continue to exert effects on adult children's behaviour.

In addition to the importance general parenting style, we also evaluated the role of parenting specifically regarding food in specific on change in eating behaviours between Week 1 and Week 9. Partial correlations were conducted between the Adapted Child Feeding Questionnaire subscales and each Weekly Eating Behaviours Scale (WEBS) subscale at Week 9, controlling for the corresponding WEBS subscales at Week 1. The more that parents regulated their child's food intake in childhood, the greater the increase in healthy eating between Week 1 and Week 9 ($r = .25$, $p < .05$). None of the other CFQ-Adapted subscales predicted any changes in eating behaviours.

Finally, it was also important to examine the role of current family and peer influences on change in eating behaviours between Week 1 and Week 9. Current family dieting and weight concerns did not predict any change in eating behaviour over the nine weeks. However, the

more accepting family members were of themselves being overweight, the less that participants engaged in healthy eating between Week 1 and Week 9 (r = -.29, p < .05). Also, the more participants reported that their peers diet at Week 1, the greater the increase in their own irregular eating patterns between Week 1 and Week 9 (r = .36, p < .05).

Finally, current situational stress was examined as a potential predictor of change in problematic eating behaviours. Partial correlations were conducted to evaluate the influence of cumulative perceived stress and cumulative objective stress over the semester on change in eating behaviours between Week 1 and Week 9. Both restrictive dieting (r = .51, p < .01) and dysregulated, emotional eating (r = .31, p < .05) increased over the course of the semester as perceived stress increased. Likewise, the more cumulative objective stress participants had over the term, the more likely they were to increasingly engage in restrictive dieting (r = .47, p < .01), and dysregulated eating (r = .31, p < .05). Neither irregular eating due to being overly busy, nor healthy eating was predicted by either stress measurement.

We looked more closely at the relationship between dysregulation, restriction, and stress using structural equation modeling (SEM; Figure 3). As both perceived stress and objective stress were of similar predictive power, only the SEM results for perceived stress were evaluated. Week 1 dysregulated eating and restriction were used as predictors of Week 9 dysregulated eating and restriction, respectively, and cumulative perceived stress was used as a predictor of both Week 9 dysregulation and restriction, such that the model was strong, χ^2(df =2) = 4.895, p = .09. Both restriction and dysregulation at Week 9 were significantly predicted by baseline eating status, as well as by the amount of cumulative perceived stress. The magnitude of the effect of stress on eating behaviour was stronger for restriction than for dysregulation, suggesting that a period of stress accumulation has a greater impact on dieting behaviour than emotional over-eating. The relationship between stress and eating behaviours is discussed in more detail below.

Of note, although I assessed whether coping would moderate the effect of stress on eating behaviour, several problems with this scale emerged that did not permit adequate assessment of this prediction. Further elaboration of these problems follows in the discussion section.

Describing patterns of change in eating behaviour and stress over time

An important aspect to the present study was the longitudinal assessment of eating patterns and stress. First I tested whether a linear pattern of change would best describe overall change in eating patterns and stress over the course of the semester as well as whether individual differences in the linear trajectories would be evidenced such that some participants would experience an increase in some eating behaviours and stress over the semester, whereas others would experience a decrease.

I assessed two widely used longitudinal models, the Latent Curve Model (LCM) and the Autoregressive Model (AR) (Figure 4). In both models, the variables labeled W1 through W9 represent the nine measures, one for each week, of a longitudinal variable (for e.g., in the present study one such variable would be "restriction"). In the LCM, shown in the upper panel, patterns of change are characterized by using two latent variables, labeled the Intercept Factor and the Slope Factor. These represent a separate, underlying intercept and slope for each participant, and individual differences in these intercepts and slopes constitute the characterization of change across time in the longitudinal variable being modeled.[1] The residual variables or disturbances, labeled E1 through E9, represent all other influences, including random measurement error, that may affect the measurements. In the model depicted in Figure 4 these other influences are assumed to be uncorrelated. The LCM is the SEM equivalent to multilevel models, such as

[1] Note that the path coefficients for the Intercept and Slope Factors are fixed to the values shown in the diagram, and the intercepts of the measured variables are set to zero, as indicated by the zeros above the boxes.

Hierarchical Linear Modeling (HLM) but additionally provides fit statistics to inform the fit of the models being tested.

The AR model, shown in the lower panel of Figure 4, depicts the process of change differently from that in the LCM. In the AR model, at each point in time the level of the longitudinal variable is assumed to be the result of both: a tendency for the variable to be stable temporally (represented by the path from the previous measure) and the tendency for other influences [represented by the path from the respective disturbance (E)], to increase variability. One important version of this model fixes all the autoregressive coefficients (i.e., from W1 to W2, from W2 to W3, from W3 to W4, etc.) to be equal, such that the tendency of a measure to predict itself at the next time point is fixed (not changing across time). If the data warrant it, this approach pools information about the autoregressive effects, increasing power and precision of estimation.

A recent innovation in SEM-based longitudinal models, called the Autoregressive Latent Trajectory (ALT) model, represents an integration of the LCM and the AR (Bollen & Curran, 2004, 2006; Curran & Bollen, 2001). The ALT model is shown in Figure 5 and like the LCM, the intercept and slope factors are defined by their respective sets of fixed loadings, and the intercepts of the measures W2 through W9 are fixed to zero. Also, similar to the AR model, there is an autoregressive path from each measure to its immediate successor, and the initial measure (W1) is treated as an exogenous variable (that is, its causes lie outside the model), thus absorbing all omitted prior influences. In the ALT model, the interpretation of the latent growth factors (both intercept and slope) differs somewhat from their interpretation in the LCM. In particular, the intercept factor and the slope factor reflect stability as well as linear change in the repeated measures (W2 through W9), controlling for measurement in the previous time point

(W1 through W8, respectively). That is, these latent variables capture latent growth effects while partialling out the autoregressive effects.

For each of the main longitudinal variables (dysregulated eating, restriction, irregular eating, perceived stress, and objective stress), four alternative univariate models of change were estimated (Table 10). There were two versions of the ALT (Autoregressive Latent Trajectory) model: (1) with the autoregressive paths allowed to vary; and (2) with them all fixed to be equal. The comparison of these two models allows us to ascertain whether autoregressive effects differ significantly across time. The two other models estimated for each variable were the LCM (Latent Curve Model) and the AR (Autoregressive) model.

All models were estimated with Amos 7.0, using its direct maximum likelihood approach for missing data (Arbuckle, 1996). Table 10 shows the χ^2, CFI, and ECVI fit statistics for each model. According to these statistics, neither the autoregressive models nor the LCMs provided particularly good fit while the ALT models fit notably better. With regard to the two alternative ALT models, for most of the variables (healthy eating, irregular eating, dysregulated eating, restrictive dieting, and perceived stress) the model with autoregressive coefficients set to be equal did not differ significantly from the model with autoregressive coefficients allowed to vary over time. In addition, for all these variables, the ALT model with autoregressive coefficients set to be equal has the lowest ECVI of the four alternative models, and for all but restriction, the CFI is at or above .90. In contrast, for objective stress the comparison of the ALT model with coefficients equal with the ALT model with coefficients free to vary is statistically significant ($\Delta \chi^2$ (7) = 16.24, $p < .05$), indicating that the autoregressive coefficients differ significantly across time. In addition, the CFI is the highest and the ECVI the lowest when autoregressive coefficients are free to vary, indicating that this model better describes the pattern of change for objective stress. In summary, for all the longitudinal variables, the ALT model fit better than the

LCM and AR alternatives. For all but one of the variables, an ALT model with equal autoregressive coefficients fit well; whereas, objective stress gave results indicating autoregressive coefficients that differ across time.

Table 11 provides important parameter estimates based on the univariate ALT model for each of the six variables. With regard to the eating behaviours, the intercepts provided are consistent with the scaling on the WEBS. For healthy eating, the estimate for mean of intercept indicates that, on average, participants started at a value of about 2.2, which means that on average, participants engaged in healthy eating behaviours on one or two days per week. The estimate for mean of the slope is not significantly different from zero, indicating that, on average, participants did not increase or decrease in healthy eating behaviours across time. However, the estimated variances for both the intercept and the slope are significantly different from zero, showing that there were significant individual differences in the linear trajectory across time (e.g., some participants had a positive slope, whereas others had a negative slope). However, there was no overall pattern of change in healthy eating that describes the group as a whole.

The estimate for the mean of the intercept factor for irregular eating indicates that, on average, participants were a value of 1.9 on the WEBS scale, which is roughly equivalent to engaging in irregular eating behaviours on one to two days per week. The estimate for the average slope is not significantly different from zero, indicating that, like healthy eating, on average participants did not change across time. The variance of the intercept factor was significant, and the slope factor was marginally significant, indicating that there was a tendency for individuals to increase or decrease in irregular eating over time, although there was no average change for the group as a whole.

The mean of the intercept factor for restriction (dieting) indicates that, on average, participants started at a score of 1.1, indicating that these behaviours occur infrequently in this

sample. The mean and variance of the slope indicates that participants did not change, on average, over time. However, the variance of the intercept indicates that there were significant individual differences in tendency toward restrictive behaviour. The combination of an insignificant variance of slope and a significant intercept variance suggests that restriction may be a more chronic, long-term type of behaviour. As well, significant autoregressive effects were observed for restriction, indicating that an individual's restriction status on one week is a good predictor of restriction status for the following week.

Summing participants' ratings of perceived stress across four domains created cumulative perceived stress for each week. The rating scales ranged from a low score of 1, which is equivalent to minimal stress in the corresponding domain, to a high score of 5, corresponding to extreme stress. Thus, the lowest possible sum for perceived stress is 4, and the highest possible sum is 20. The intercept for perceived stress shows that participants started at a score of 6.3, which means that participants had a low level of perceived stress on average. The slope factor indicates that there is, on average, a significant decrease in perceived stress over time. As well, the variance of the intercept factor is significant, indicating that there are significant individual differences in the tendency to perceive stress. Significant autoregressive effects indicate that an individual's perceived stress score one week is a good predictor of how much stress they will perceive the following week.

The objective stress index was created by assigning numerical values to each stressor, based on the study conducted with a separate student population. The range of scores for specific stressors is from 1 (for the least stressful item), to 5.2 (the most stressful item). The intercept for objective stress is 14.53, which would be roughly equivalent to three extreme stressors, or multiple minor stressors. The slope indicates that, on average, there is a significant increase in objective stress across time. The intercept variance is insignificant, suggesting that

there are few individual differences in tendency to experience stressors. The variance of the slope is significant, indicating that individuals differ in their patterns of change over time. The autoregressive effects tended to be related toward the start of the term, but at the end of the semester became unrelated.

Predicting individual differences in eating behaviour trajectories

Having characterized the pattern of change in each of the four main longitudinal eating variables, I then proceeded to predict these individual differences in trajectory across time using various predictor variables from the study. First, we will evaluate the role of time-invariant variables, those that were only assessed at Week 1. These variables are the general parenting styles and child feeding behaviours, representing the Developmental History Model. The other set of variables are the family and peer weight focus factors, family acceptance of overweight, and family encouragement to diet, which are all components of the Situational Model framework. I hypothesized that current family and peer weight and dieting factors would be most predictive of the eating behaviour models, followed by parental child-feeding behaviour, and then general parenting style.

For each of the four longitudinal eating behaviour variables (healthy eating, irregular eating, dysregulated eating, and restriction) we used the conditional ALT model to evaluate three sets of time-invariant predictor variables, each comprised of six variables each (Figure 6). The first set comprised six major parenting-style variables: Mother authoritarianism, mother authoritativeness, mother permissiveness, father authoritarianism, father authoritativeness, and father permissiveness. The second set comprised six variables from the Adapted Child Feeding Questionnaire: Regulating Intake, Restricting Sweets, Concern about Weight, Encouraging Healthy Eating, Pressure to Eat More, and Rewarding Good Behaviour. The third set of predictors consisted of six family and peer dieting and weight concern variables: Mother Weight

Focus, Father Weight Focus, Sibling Weight Focus, Family Weight Acceptance, Family Encouragement to Diet, and Peer Weight Focus. The six time-invariant variables are represented in Figure 6 as X1 through X6. The following results describe how well each set of variables predict the intercept and slope factors of the eating behaviours.

General parenting style (authoritarian, authoritative, and submissive styles for each parent) predicted healthy eating [χ^2(df =71) = 110.58, p = .002; CFI = .93; RMSEA = .08] with predictor variables explaining 33 % of the variance in the slope and 6 % of the variance in the intercept. The standardized regression weights showed that higher mother permissiveness predicted a decreasing slope factor (β = -.57, p < .01) for healthy eating, such that the more permissive the mother was, the more healthy eating was reduced over the course of the semester. Past parental feeding practices also significantly predicted healthy eating [χ^2(df =71) = 110.58, p = .002; CFI = .92; RMSEA = .08] with the predictor variables explaining 27 % of the variance in the slope and 20 % of the variance in the intercept. The overall tendency to eat healthy was significantly predicted by parents pressuring the child to eat more (β = -.32, p < .05), indicating that such pressure leads to less healthy eating. Pressure to eat more food also influenced the amount of change in healthy eating (β = .30, p < .05), such that excessive parental pressure to eat more food leads to an increase in healthy eating over the course of the semester. This suggests that although parental pressure predicts less healthy eating overall, it also predicts a greater increase in healthy eating over time. As well, parental encouragement to eat healthy predicted a greater overall tendency toward current healthy eating (ß = .28, p < .05). Finally, I predicted how family and peer weight concern, family encouragement to diet, and family weight acceptance affect the slope and intercept for healthy eating. These variables also described healthy eating [χ^2(df =71) = 101.70, p = .01; CFI = .94; RMSEA = .07], with the predictor variables explaining 16 % of the variance in the slope and 33 % of the variance in the intercept.

The standardized regression weights revealed some specific relationships with the variables, including that more family acceptance of being overweight predicts a greater decrease in healthy eating over the semester (ß = -.41, $p < .05$). Also, the more that peers are concerned with weight, the lower the participants' overall tendency to engage in healthy eating (ß = -.53, $p < .01$). The results suggest that all three clusters of time-invariant variables are important predictors of the pattern of change in healthy eating.

Next, we evaluated the role of these same sets of predictor variables in explaining the intercept and slope of irregular eating because the student is busy. The first set of predictors, general parenting style, produced a model that fit well, $\chi^2(df = 71) = 107.50$, $p = .003$; CFI = .92; RMSEA = .08. The general parenting style variables explained 42 % of the slope variance and 8 % of the intercept variance. Specifically, authoritative mothering predicted an increase in irregular eating over the course of the semester (ß = .42, $p < .05$). The child feeding predictors produced a model which fit irregular eating only moderately well [$\chi^2(df = 71) = 116.43$, $p = .002$; CFI = .89; RMSEA = .09], with the predictor variables explaining 14 % of the slope variance and 3 % of the intercept variance. The current family and peer predictors also produced a model which described irregular eating only moderately well [$\chi^2(df = 73) = 140.28$, $p < .001$; CFI = .84; RMSEA = .10], with the predictor variables explaining 10 % of the variance in the slope and 9 % of the variance in the intercept. General parenting style proved best at explaining the pattern of change in irregular eating over the semester, while the other two sets of predictors were not as effective at explaining irregular eating.

I then assessed the role of the three sets of predictors in modeling dysregulated eating (emotional over-eating), first using general parenting style factors. This model fit well [$\chi^2(df = 73) = 80.14$, $p = .27$; CFI = .99; RMSEA = .03], and these predictors explained 29 % of the

variance in the slope and 22 % of the variance in the intercept. The standardized regression coefficients revealed that higher employment of an authoritarian style for mothers predicted a higher overall tendency for participants to engage in emotional over-eating (β = .56, p < .01). Next, the parental child feeding items were evaluated, and revealed a model that fit well [χ^2(df =71) = 89.52, p = .092; CFI = .96; RMSEA = .05], with these variables explaining 23 % of the variance in the slope and 13 % of the variance in the intercept. The more that parents encouraged the child to eat healthily, the greater the decrease in dysregulated eating over the semester (β = -.49, p < .01). Finally, the current family and friend cluster revealed a model with good fit [χ^2(df =71) = 88.82, p = .075; CFI = .96; RMSEA = .05], which explained 32 % of the variance in the slope and 11 % of the variance in the intercept. This suggests that a social environment that encourages dieting behaviour is related to an increase in emotional over-eating.

Last, restrictive dieting was evaluated using these three clusters of time-invariant predictors. First, the general parenting set, revealed a model with only moderate fit [χ^2(df =73) = 168.23, p < .001; CFI = .83; RMSEA = .12], explaining 65 % of the variance in the slope and 9 % of the variance in the intercept. The child feeding factors also produced a model with moderate fit [χ^2(df =73) = 165.238 p < .001; CFI = .81; RMSEA = .12], explaining 65 % of the variance in the slope and 9 % of the variance in the intercept. There was a trend toward more parental regulation of the amount of food the child consumed predicting a higher level of overall restriction (β = .31, p = .06). The final set of predictors, the family and peer cluster, revealed a model which fit moderately well [χ^2(df =73) = 191.17 p < .001; CFI = .78; RMSEA = .14] and which explained 51 % of the slope variance, and 14 % of the intercept variance. The results show that restriction was not modeled particularly well using the three sets of time-invariant

predictors, although the other three types of eating behaviours were better predicted by these factors.

Time-lagged effects of stress on dysregulation and restrictive dieting

The final hypothesis we tested in the current study was whether stress could have a short-term effect on eating behaviour in a week following the occurrence of higher stress levels. The effects of a time-varying predictor such as stress may be studied using a bivariate cross-lagged ALT model (Bollen & Curran, 2006), as depicted in Figure 7. For the present study I present the results of this analysis for dysregulated eating and restriction, as these are the two aspects of eating behaviour that are most often theorized to be sensitive to changes in stress level and were both strongly predicted by both cumulative and perceived stress in regression analyses. Here we used the objective stress measure only, because it reflected a much broader range of information about week-to-week stress, as compared to the perceived stress measure. This model allows for the study of the interrelation in the across-time patterns of change of two variables, such as restriction and stress, labeled R and S, respectively, in Figure 7. For example, consider S1 through S9 to be weekly levels of stress and R1 through R9 to be weekly levels of restriction. I focus here on the cross-lagged relations between R and S because these provide evidence for a causal relationship between these variables. That is, the cross-lagged relation of stress level to restriction one week later evaluates the hypothesis that stress has an effect on subsequent restriction.

The bivariate cross-lagged ALT model evaluating the interrelation of week-to-week objective stress with restriction fit the data only moderately well [χ^2 (df = 134) = 264.57, $p <$ .001; CFI = .87; RMSEA = .10]. The cross-lagged relation between weekly stress level and restriction one week later was insignificant (p = .34) with standardized path coefficients of .04 to .06 (Table 12). However, quite surprisingly, the cross-lagged relation between weekly restriction

and stress level one week later was significant (p = .004), yielding standardized path coefficients of .07 to .11. This pattern of results may be interpreted as indicating that relations between stress and restriction reflect the tendency of week-to-week changes in restriction to increase subsequent stress.

The second bivariate cross-lagged ALT model evaluated the interrelation of week-to-week objective stress with dysregulation. This model fit the data reasonably well [χ^2 (df = 132) = 208.10, p < .001; CFI = .91; RMSEA = .08]. Here, the cross-lagged relation between weekly stress level and dysregulated eating one week later was significant (p = .027), yielding standardized path coefficients of .10 to .14 (Table 13). In contrast, the cross-lagged relation between weekly dysregulated eating and stress level one week later was negligible (p = .59), with standardized path coefficients of –.01 to –.02. This pattern of results indicates that relations between stress and dysregulation reflect the tendency of week-to-week changes in stress to increase subsequent dysregulated eating. The results for the relationship between weekly fluctuations in stress and changes in dysregulation and restriction will be discussed in more detail in the discussion.

Discussion

The purpose of the present study was to evaluate the role of developmental history and current relational and situational influences in predicting changes in eating behaviour in first-year undergraduate women. The findings provide support for both developmental factors (parenting generally and specifically to food) and situational factors (family and peer influences to diet and stress) as influences in current eating behaviours. Further, I found that experienced stress was a strong predictor of baseline eating patterns, as well as of change in eating behaviours over the semester.

First, with regard to developmental factors, I hypothesized that more controlling parenting styles would be associated with a higher level of problematic eating behaviours at baseline, and would also predict an increase in eating problems over time. Our results were consistent with previous research findings (Polivy & Herman, 2002), suggesting that excessively controlling parenting was associated with more eating problems, specifically in this study with greater restrictive dieting and more emotional over-eating. These results suggest that excessive parental control may lead children to respond either by attempting to assert control through restriction, or to self-soothe when feeling a lack of control by over-eating. Although I did not predict that permissive parenting would also lead to problematic eating behaviours, I found that permissive parenting was also predictive of emotional over-eating and irregular eating. As these two patterns of eating are both characterized by loss of control over eating, the results suggest that less parental control may not help children to develop appropriate and consistent limits around food consumption.

Regarding parents' specific regulation of their daughter's eating, I expected that more parental control over food during childhood would predict more eating problems in adult children. The results, however, were somewhat more complex. In line with my predictions, parents' concern with their child's weight was related to current problematic eating behaviours, however parental control over food intake was not strongly and consistently related to current eating problems. In fact, when looking at change over time, the more that parents regulated their child's eating behaviour (for e.g., by limiting quantities or certain types of foods), the greater the increase in healthy eating over the nine-week period of the study. This finding suggests that some types of parental regulation of children's eating may be beneficial for the child's later eating patterns. Notably, parents who are overly concerned with their child's weight may engage

in other behaviours that contribute to eating regulation problems, or the messages conveyed regarding weight may be damaging to the child's development of regulatory control over eating.

Next, I wanted to demonstrate the mechanism by which these parental behaviours may be influencing current behaviours. I found that the relative autonomy with which people regulate eating was an important mediator of the relationship between parental behaviours around food and the child's current eating behaviour. The more that parents were concerned about their child's weight in childhood, the more controlled their adult children were in regulating their eating. Specifically, their children were more likely to be concerned with regulating their eating for purposes of maintaining appearance and because other people wanted them to engage in healthy eating, and they were more likely to engage in both irregular eating when they were busy and emotional over-eating. Both of these types of behaviours involve unhealthy eating either because the person does not make time to prepare healthy meals, or the person eats as a means of coping with unpleasant emotions. Also interesting is that the more parents encourage healthy eating, the more their children were autonomous toward eating currently, thereby improving their current ability to maintain a varied diet, and to avoid irregular eating patterns.

Current relational concerns and situational events in the individual's current environment (e.g., stressors) may hold additional power to predict current eating behaviours. At baseline, the more family members accepted themselves being overweight, the more participants reported dieting. It seemed intuitive to expect that greater family acceptance of being overweight would lead to less, rather than more, restrictive dieting. However, it is possible that participants rated their family members as higher on acceptance of weight if their family members were indeed overweight, with higher levels of restriction arising in these participants because they are trying to avoid becoming overweight like the other members of their family. Our results also showed that the more family members encouraged the participant to diet, the more likely the participant

was to diet, as well as engage in emotional over-eating. Because of the correlational nature of the data, I cannot determine whether family members encourage more dieting in participants who have a history of over-eating.

Direct instruction to lose weight from family members was associated with unhealthy eating behaviours, while indirect family influences had little effect on current eating behaviours. For example, we expected more dieting in participants who observed more current weight concerns and dieting behaviour in their parents. However, there was no relationship between parental weight focus and dieting, and participants' eating behaviours. Current parent dieting and weight concern also did not predict any changes in eating behaviours. In contrast, peer dieting was related to participant engagement in all three types of problematic eating (restriction, dysregulation, and irregular eating) at Week 1, providing some support that adolescents and young adults may be affected by their peers' behaviours. Unfortunately, we did not assess peer influences at multiple time points over the term, and peer groups may have changed substantially over the nine weeks of the study. The peer influences that were reported at baseline may have become less important, while new relationships may have influenced participants' eating behaviour more toward the end of the semester. The results show that the family's own weight concerns were not in themselves predictive of current eating behaviours, whereas peer behaviours were much more important in determining the eating behaviours of university students.

The other situational variable assessed was stress, which was evaluated at the end of each week. Through several methods of analysis, both objective and subjective stress were demonstrated to relate to problematic eating at baseline, and to predict an increase in these behaviours over time. This work supports past literature, which has suggested that emotional over-eating (dysregulation) act as a means of self-soothing or distracting during periods of stress,

especially in chronic dieters (Polivy & Herman, 1999). In the present study, I also found some evidence that restriction may also arise when stress levels are high because the individual diets as a method of asserting control and gaining a sense of mastery in a chaotic environment.

Initial stress levels, whether measured by an objective measure or participants' perceptions of stress intensity, were strongly related to both dysregulation and restriction, and somewhat less related to irregular eating and healthy eating (for the case of objective stress only). Although this pattern was in the expected direction, with more pathological forms of eating related to higher stress levels, it is unclear why healthy eating and objective stress were related at baseline. Stress also predicted an increase in emotional over-eating and restrictive dieting over the nine-week study period, whereas stress levels predicted neither irregular eating nor healthy eating changes. It is possible that irregular eating may not increase due to stress because this behaviour may be common among busy undergraduate students, regardless of how many stressors they experience or perceive. It was expected that healthy eating would decrease because of higher stress levels, but this was not found, perhaps suggesting that healthy eating may be a more stable behaviour, or at least one that is not altered because of life stressors. Individuals who engage in healthy eating may do so because they have internalized the importance of healthy eating and have made a commitment towards its maintenance. Students may also simply engage in low levels of healthy eating over the course of the semester, and do not attempt to improve their eating patterns during this time period. Overall, the findings suggest that stress is particularly useful in predicting increases in pathological eating behaviours, whereas the time-invariant variables (e.g., family and peer influences) were not as effective at predicting change.

A unique aspect to the current study was the fact that we collected data on eating behaviours and stress once per week, for nine weeks over the first semester of university. In

order to utilize all of this valuable information, I assessed the patterns of change that occurred over the semester in the four types of eating behaviours using information from all nine weeks of the data. I used three sets of time-invariant variables, (general parenting, parental child feeding, and family and peer dieting) as predictors of the pattern of change for the four types of eating behaviours over the four weeks. I found individual differences in healthy eating over the semester, including differences in overall healthy eating and change over time. I also found that the variability in participant's engagement in healthy eating was described well using the background variables, that is, general parenting, child feeding, and family and peer dieting factors are all important determinants of the individual's current level of healthy eating. The pattern was somewhat different when we looked at irregular eating patterns (the individual was too busy to prepare and plan meals) because although participants differed in their underlying level of irregular eating, there were fewer individual differences in level of change in this behaviour over the semester. When examining the sets of predictors, we observed that irregular eating was specifically influenced by general parenting, but parent child feeding and family and peer dieting were less important in predicting the pattern of change for irregular eating.

The most interesting findings arising from my assessment of the change process in eating behaviour relates to the findings for the dysregulated eating and restriction factors. For dysregulation, I found marginal individual differences in participant's underlying tendency toward engaging in dysregulated eating, as well as in linear change of this behaviour over time, such that some participants increased in dysregulated eating whereas others tended to decrease over the term. However, knowing a woman's level of dysregulation one week provided little information on how dysregulated she would be in the subsequent week, suggesting that there are short-term fluctuations in dysregulation. When I used general parenting, parental child feeding, and family and peer dieting, to model this pattern of eating behaviour, I found all three of these

predictors were important predictors of dysregulated eating, suggest that developmental factors and current relational influences are important in determining a woman's level of dysregulated eating.

In order to further investigate the dysregulated eating, I modeled the relationship between dysregulation and objective stress, specifically examining the week-to-week relationship between stress and dysregulation. Importantly, I found that more stress on one week predicted higher levels of dysregulation on the subsequent week. Therefore, a participant's experience of stress one week will produce more emotional over-eating in the following week, but these levels of dysregulation decrease once stressors are reduced. There was only a marginally significant finding for an overall change in dysregulation over the semester, probably because this behaviour tends to fluctuate over short time periods. Although I was unable to utilize the coping measure for the current analysis, we would expect that individuals with less adaptive coping strategies would be those who would experience the widest fluctuations in dysregulated eating, based upon the intensity of recent stressors they experienced. The current findings provide evidence for a direct link between the experience of stress and emotional over-eating, and potentially with further analysis I will establish the role of coping in regulating this dysregulated eating behaviour.

It was somewhat more difficult to model the relationship between stress and restrictive dieting. There were individual differences in levels of dieting behaviour, indicating that some individuals are more likely to diet on a regular or chronic basis than are others. However, there were no differences in linear trajectories over time, suggesting that dieting occurs over a longer period of time with fewer variations in a short time period. As evidence of this point, restrictive dieting at one week tended to predict dieting the following week. In addition, dieting was less susceptible to change due to weekly stress, in contrast to the pattern observed with dysregulation.

These findings are consistent with actual dieting behaviour, in which an individual usually abides by a diet for a period of time lasting longer than one week. Cumulative perceived stress was a strong predictor of an increase in dieting behaviour between Week 1 and Week 9, suggesting that an accumulation of stressors may be a better predictor of this type of behaviour than short-term changes in stress levels. Perhaps dieting begins after a longer period of continuous stress, rather than as an immediate response to short-term stress. Dieting may also begin as a physiological response to long-term experience of stress, as stress has the effect of reducing appetite in normal individuals (Zellner et al., 2006). The combination of reduced appetite and the desire for control may work in tandem to produce higher levels of dieting in individuals experiencing elevated stress levels.

When examining the effect of weekly objective stressors on subsequent restriction, and weekly restriction on subsequent objective stress, I found an unusual relationship between weekly stress and weekly changes in restriction. I also found that higher levels of restriction in one week predicted higher number of stressors in the subsequent week, which is surprising given that we were expecting to find the opposite; that stress levels would predict an increase in eating problems. There is no clear explanation for why restriction would cause a greater number of stressful events. Perhaps, based on findings from the coping and eating disorder literature (for e.g., Mayhew & Edelmann, 1989), the individuals who engage in restriction are the same individuals who engage in maladaptive coping behaviours (such as avoidance and procrastination). One aspect of coping is anticipating upcoming stressors and preparing in advance, which may not be used as frequently in individuals who more readily apply maladaptive coping styles. I might expect that individuals who do not anticipate or prepare for stressors will experience a greater number of stressful experiences and will also cope poorly when these events occur. As well, individuals who are overly focused on their weight and

dieting may neglect to deal with other aspects of their lives as well, and this may also allow a greater number of stressors to occur. However, until additional data is collected and I conduct a more thorough investigation of these relationships, this finding is a matter for speculation.

There are some methodological limitations of the present study. Generally, much of the data we collected in the current study was retrospective, which reduces the strength of the conclusions we can draw regarding actual parental styles and practices. Participants' recollections of their parents' behaviour when they were children are affected by their own perceptions, current biases, and perhaps selective recall of certain events over others. Thus, the current findings may not reflect parental behaviours accurately, but rather may reflect the role of participants' perceptions and memories of these behaviours. Although it is a disadvantage that I did not collect information from parents, I suggest that the adult child's perspective offers more predictive value than the parents' perspective. Given that parents would respond with their own biases and memory failures as well, the adult child's perspective was considered more valuable. As observed in other studies (Fisher & Birch, 1999), there is often little relationship between actual parental behaviours and children's perceptions of those behaviours, even when participants are assessed as children. However, the children's perception rather than actual parental behaviours is more important in predicting the child's behaviour. Considering the role of parental concern about weight and encouragement to diet in predicting eating problems, it may be that these negative comments about weight and eating would colour participants' memories of their parents feeding behaviours. Future research could benefit from longitudinal research tracking parents and children from a young age and evaluating changes in eating behaviours of the children and feeding behaviours of the parents over time. One important aspect we could not assess in the current study was the influence of the child's behaviour on parental feeding behaviours, and it would be valuable to know whether some parents employ a

more controlling style over their child's intake because of their child's inherent inclination toward over-eating. Children of parents who exhibited more control may continue to over-eat as adults, as a continuation of their behaviour in childhood, rather than due to the behaviour of their parents.

A further limitation of the present study was the strongly correlated coping measures both across domains and over time. I first attempted to apply numerical values to each coping strategy in the different domains based on ratings by a separate participant sample. The ratings of coping strategies were highly similar across all four domains, and also different coping strategies did not differ widely in their effectiveness ratings. I then attempted to generate four coping strategies based on previous literature (problem-focused, avoidant, positive emotion-focused, and negative emotion-focused). Each coping strategy was highly correlated across the different time points, and so I collapsed participants' coping measures across time to produce a dispositional measure of coping. Finally, after aggregating the coping styles across the nine weeks, I examined the correlations between each coping style, and found that they were highly correlated. Several factors could contribute to the high levels of correlations between the four types of coping. I suspect that individuals who experienced more stressors over a particular week also endorsed a greater number of coping strategies for that week. Participants were probably considering multiple events when completing the measures for each domain, and the coping strategies for different events within the same domain are not necessarily alike. Their use of a wide range of coping strategies each week may be a reflection of a large number of stressors. Similarly, an individual who experienced no stressors in a particular domain in a given week would have endorsed none of the coping strategies within this domain. Therefore, the high level of correlations between the different types of coping reflects the unusual nature of the scale administration, rather than potentially an accurate finding regarding coping. The greater the

number of coping strategies endorsed each week, the greater the number of stressors we would expect the individual to have experienced over the previous week. An alternative method for assessing coping would be to have participants only rate the coping skills they employed for the most stressful event they experienced in each domain each week. This would allow for better distinction between the coping strategies because participants would be able to focus on a single event.

In addition to these findings for coping, another limitation of the current research was the lack of power to conduct more meaningful autoregressive linear trajectory (ALT) modeling. The longitudinal sample was based on an initial population of 90 participants, of which approximately 70 responded each week. This type of design usually requires larger samples, and so the findings from the analysis in the current study should be interpreted cautiously. However, I will collect additional data will, which will improve power for these analyses.

In spite of the drawbacks to the study method, there were a number of strengths of this study. For instance, we obtained findings in support of the Developmental History Model and also the Situational Model in predicting an increase in eating problems over nine weeks in a normal population of university women. We can begin to consider how background variables such as parenting history and current events causing stress contribute to current eating problems in this population. It is important to further examine eating pathology in this population, because they struggle with regulating their eating in first semester of university.

Importantly, stress predicted an increase in both restriction and dysregulation in this study. Although I was unable to utilize the coping measure in the current analysis, the strong role of stress in predicting an increase in eating pathology suggests that further analysis of the role of coping in this relationship is warranted. The increase in both of these types of behaviours, which are sometimes considered to be maladaptive forms of coping with stress

(Mayhew & Edelmann, 1989) indicates that some university women are ill prepared to handle the stressors of university. Future analyses will use information not presented in the current paper to determine whether other maladaptive coping methods are also engaged in more during periods of stress (for e.g., alcohol, drug, and substance use each week), and also whether these behaviours occur in relationship with problematic eating behaviours. Future interventions could focus generally on the role of stress in the development of these maladaptive methods of coping.

Another advantage to the current study was the development and utilization of a new scale, the Weekly Eating Behaviours Scale (WEBS), which allowed me to detect short-term changes in specific eating behaviours. This detailed analysis of eating behaviour on a weekly basis has not occurred in prior studies of the relationship between stress and eating. In the future, the WEBS could be modified to assess daily eating behaviours, which would provide an even more detailed picture of changes in eating behaviours. Analysis of eating behaviours on a daily level would reduce the effect of participant forgetting on the results, and it would also allow a closer look at daily eating changes in response to daily stressor.

In addition to conducting a more detailed diary study of daily eating behaviours, a longer-term study of the nature of eating problems in university students may be warranted. We did not find a significant linear increase in restriction over the semester, but perhaps if we examined this behaviour over two semesters we would find such an incline. Dieting seems to occur after a longer period of stress, and perhaps by only collecting data for nine weeks we did not fully capture changes in eating that take time to occur. We could also investigate if the eating patterns change significantly over an entire academic year, perhaps improving in some students because of adjustment to university life.

University women were participants in the present study because this population is at higher risk for disturbed eating patterns (Mintz & Betz, 1988), and also because first-year

students experience many stressors. Male students are expected to have similar levels of stress at the beginning of university, and they may also struggle with regulating their eating and coping with stress during their first term of university. Although males are less at risk for eating disorders than females (Striegel-Moore et al., 1989), they may engage in other maladaptive methods of coping with stress, such as use of alcohol or other substances, or engaging in excessive exercise. Non-university samples would also provide information on whether the current relationships are unique to a university population, or whether higher levels of stress predict eating pathology in other populations. Further research on various samples would allow us to establish whether the factors that are important to the development of problematic eating in university students are also relevant to other populations.

The findings of the current study provide some insights into interventions that may be useful in the future for reducing levels of problematic eating in university women. The present study indicates that stress from a variety of sources contributes to problematic eating, and so this could be indirectly targeting by providing information on stress management and maintaining a balanced schedule. Some students may also benefit from information on nutrition and the value of scheduling meal preparation into their schedule, to prevent a reliance on fast food meals and poor food choices in students who do not view healthy eating as a priority. Increasing university counselor's awareness of the relationship between stress and eating pathology is also valuable so that counselors are sensitive to the possible presence of these issues in the students with whom they work. After further research is conducted in additional samples and the WEBS is further validated, it is possible that this measure could become a useful therapeutic tool. Therapists could use this measure with clients who have difficulty managing their eating as a means of tracking changes in their eating over time, and improving the client's awareness of the relationship between their eating behaviours and the other events in their life.

In sum, the current study modeled multiple influences on current eating behaviours, and found that it is possible to predict changes in eating behaviour in this population using developmental history variables, peer influences, and stress. The role of these variables, as well as others, will be further investigated in future research. I expect that this is a diverse area for investigation, and no single factor will provide sufficient explanation of eating behaviours. Rather, many factors contribute to the development of eating problems in university women, and through careful study I may be able to elucidate the nature of the interaction of these factors and the unique contribution each provides to the occurrence of pathological eating.

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Appendix

QUESTIONNAIRES

Parental Authority Questionnaire (PAQ) – Mother version
(Buri, J.R., 1991)

Instructions: For each of the following statements, circle the number on the 7-point scale (1= strongly disagree, 7 = strongly agree) that best describes how that statement applies to **you and your mother**. Try to read and think about each statement as it applies to you and your mother during your years of growing up at home. There are no right or wrong answers, so don't spend a lot of time on any one item. We are looking for your overall impression regarding each statement.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1) While I was growing up my mother felt that in a well-run home the children should have their way in the family as often as the parents do.	1	2	3	4	5	6	7
2) Even if her children didn't agree with her, my mother felt that it was for our own good if we were forced to conform to what she thought was right.	1	2	3	4	5	6	7
3) Whenever my mother told me to do something as I was growing up, she expected me to do it immediately without asking any questions.	1	2	3	4	5	6	7
4) As I was growing up, once family policy had been established, my mother discussed the reasoning behind the policy with the children in the family.	1	2	3	4	5	6	7
5) My mother has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	1	2	3	4	5	6	7
6) My mother has always felt that what children need is to be free to make up their own minds and do what they want to do, even if this does not agree with what their parents might want.	1	2	3	4	5	6	7
7) As I was growing up my mother did not allow me to question any decision she had made.	1	2	3	4	5	6	7
8) As I was growing up my mother directed the activities and decisions of the children in the family through reasoning and discipline.	1	2	3	4	5	6	7
9) My mother has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	1	2	3	4	5	6	7

Please rate on the 7-point scale how much you agree with each of the following statements.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
10) As I was growing up my mother did not feel that I needed to obey rules and regulations of behaviour simply because someone in authority had established them.	1	2	3	4	5	6	7
11) As I was growing up I knew what my mother expected of me in my family, but I also felt free to discuss those expectations with my mother when I felt that they were unreasonable.	1	2	3	4	5	6	7
12) My mother felt that wise parents should teach their children early just who is boss in the family.	1	2	3	4	5	6	7
13) As I was growing up, my mother seldom gave me expectations and guidelines for my behaviour.	1	2	3	4	5	6	7
14) Most of the time as I was growing up my mother did what the children in the family wanted when making family decisions.	1	2	3	4	5	6	7
15) As the children in my family were growing up, my mother consistently gave us direction and guidance in rational and objective ways.	1	2	3	4	5	6	7
16) As I was growing up my mother would get very upset if I tried to disagree with her.	1	2	3	4	5	6	7
17) My mother feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	1	2	3	4	5	6	7
18) As I was growing up my mother let me know what behaviour she expected of me, and if I didn't meet those expectations, she punished me.	1	2	3	4	5	6	7
19) As I was growing up my mother allowed me to decide most things for myself without a lot of direction from her.	1	2	3	4	5	6	7
20) As I was growing up my mother took the children's opinions into consideration when making family decisions, but she would not decide for something simply because the children wanted it.	1	2	3	4	5	6	7

Please rate on the 7-point scale how much you agree with each of the following statements.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
21) My mother did not view herself as responsible for directing and guiding my behaviour as I was growing up.	1	2	3	4	5	6	7
22) My mother had clear standards of behaviour for the children in our home as I was growing up, but she was willing to adjust those standards to the needs of each of the individual children in the family.	1	2	3	4	5	6	7
23) My mother gave me direction for my behaviour and activities as I was growing up and she expected me to follow her direction, but she was always willing to listen to my concerns and to discuss that direction with me.	1	2	3	4	5	6	7
24) As I was growing up my mother allowed me to form my own point of view on family matters and she generally allowed me to decide for myself what I was going to do.	1	2	3	4	5	6	7
25) My mother has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up.	1	2	3	4	5	6	7
26) As I was growing up my mother often told me exactly what she wanted me to do and how she expected me to do it.	1	2	3	4	5	6	7
27) As I was growing up my mother gave me clear direction for my behaviours and activities, but she was also understanding when I disagreed with her.	1	2	3	4	5	6	7
28) As I was growing up my mother did not direct the behaviours, activities, and desires of the children in the family.	1	2	3	4	5	6	7
29) As I was growing up I knew what my mother expected of me in the family and she insisted that I conform to those expectations simply out of respect for her authority.	1	2	3	4	5	6	7
30) As I was growing up, if my mother made a decision in the family that hurt me, she was willing to discuss that decision with me and to admit it if she had made a mistake.	1	2	3	4	5	6	7

Parental Authority Questionnaire (PAQ) – Father version
(Buri, J.R., 1991)

Instructions: For each of the following statements, circle the number on the 7-point scale (1= strongly disagree, 7 = strongly agree) that best describes how that statement applies to **you and your father**. Try to read and think about each statement as it applies to you and your father during your years of growing up at home. There are no right or wrong answers, so don't spend a lot of time on any one item. We are looking for your overall impression regarding each statement.

		Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1)	While I was growing up my father felt that in a well-run home the children should have their way in the family as often as the parents do.	1	2	3	4	5	6	7
2)	Even if his children didn't agree with him, my father felt that it was for our own good if we were forced to conform to what he thought was right.	1	2	3	4	5	6	7
3)	Whenever my father told me to do something as I was growing up, he expected me to do it immediately without asking any questions.	1	2	3	4	5	6	7
4)	As I was growing up, once family policy had been established, my father discussed the reasoning behind the policy with the children in the family.	1	2	3	4	5	6	7
5)	My father has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.	1	2	3	4	5	6	7
6)	My father has always felt that what children need is to be free to make up their own minds and do what they want to do, even if this does not agree with what their parents might want.	1	2	3	4	5	6	7
7)	As I was growing up my father did not allow me to question any decision he had made.	1	2	3	4	5	6	7
8)	As I was growing up my father directed the activities and decisions of the children in the family through reasoning and discipline.	1	2	3	4	5	6	7
9)	My father has always felt that more force should be used by parents in order to get their children to behave the way they are supposed to.	1	2	3	4	5	6	7

Please rate on the 7-point scale how much you agree with each of the following statements.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
10) As I was growing up my father did not feel that I needed to obey rules and regulations of behaviour simply because someone in authority had established them.	1	2	3	4	5	6	7
11) As I was growing up I knew what my father expected of me in my family, but I also felt free to discuss those expectations with my father when I felt that they were unreasonable.	1	2	3	4	5	6	7
12) My father felt that wise parents should teach their children early just who is boss in the family.	1	2	3	4	5	6	7
13) As I was growing up, my father seldom gave me expectations and guidelines for my behaviour.	1	2	3	4	5	6	7
14) Most of the time as I was growing up my father did what the children in the family wanted when making family decisions.	1	2	3	4	5	6	7
15) As the children in my family were growing up, my father consistently gave us direction and guidance in rational and objective ways.	1	2	3	4	5	6	7
16) As I was growing up my father would get very upset if I tried to disagree with him.	1	2	3	4	5	6	7
17) My father feels that most problems in society would be solved if parents would not restrict their children's activities, decisions, and desires as they are growing up.	1	2	3	4	5	6	7
18) As I was growing up my father let me know what behaviour he expected of me, and if I didn't meet those expectations, he punished me.	1	2	3	4	5	6	7
19) As I was growing up my father allowed me to decide most things for myself without a lot of direction from him.	1	2	3	4	5	6	7
20) As I was growing up my father took the children's opinions into consideration when making family decisions, but he would not decide for something simply because the children wanted it.	1	2	3	4	5	6	7

Please rate on the 7-point scale how much you agree with each of the following statements.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
21) My father did not view himself as responsible for directing and guiding my behaviour as I was growing up.	1	2	3	4	5	6	7
22) My father had clear standards of behaviour for the children in our home as I was growing up, but he was willing to adjust those standards to the needs of each of the individual children in the family.	1	2	3	4	5	6	7
23) My father gave me direction for my behaviour and activities as I was growing up and he expected me to follow his direction, but he was always willing to listen to my concerns and to discuss that direction with me.	1	2	3	4	5	6	7
24) As I was growing up my father allowed me to form my own point of view on family matters and he generally allowed me to decide for myself what I was going to do.	1	2	3	4	5	6	7
25) My father has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when they don't do what they are supposed to as they are growing up.	1	2	3	4	5	6	7
26) As I was growing up my father often told me exactly what he wanted me to do and how he expected me to do it.	1	2	3	4	5	6	7
27) As I was growing up my father gave me clear direction for my behaviours and activities, but he was also understanding when I disagreed with him.	1	2	3	4	5	6	7
28) As I was growing up my father did not direct the behaviours, activities, and desires of the children in the family.	1	2	3	4	5	6	7
29) As I was growing up I knew what my father expected of me in the family and he insisted that I conform to those expectations simply out of respect for his authority.	1	2	3	4	5	6	7
30) As I was growing up, if my father made a decision in the family that hurt me, he was willing to discuss that decision with me and to admit it if he had made a mistake.	1	2	3	4	5	6	7

Adapted Child Feeding Questionnaire (CFQ-Adapted)

(Adapted version of Child Feeding Questionnaire (CFQ); Birch, L.L., Fisher, J.O., Grimm-Thomas, K., Markey, C.N., Sawyer, R., & Johnson, S.L., 2001)

The following statements ask about how your parents managed your food intake when you were a child living in their home. Please rate how strongly you agree with each of the following statements using the 7-point scale (1 = strongly disagree, 7 = strongly agree).

		Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1)	Your parents were concerned about you eating too much when they were not around.	1	2	3	4	5	6	7
2)	Your parents were concerned about you maintaining a desirable weight.	1	2	3	4	5	6	7
3)	Your parents were concerned that you would become overweight.	1	2	3	4	5	6	7
4)	Your parents did not permit unhealthy snacks or junk food to be eaten in their house.	1	2	3	4	5	6	7
5)	Your parents keep track of the sweets (candy, ice cream, cake, pies, pastries) that you ate as a child.	1	2	3	4	5	6	7
6)	Your parents kept track of the snack food (potato chips, Doritos, cheese puffs) that you ate as a child.	1	2	3	4	5	6	7
7)	Your parents keep track of the high-fat foods that you ate as a child.	1	2	3	4	5	6	7
8)	Your parents ensured that you had a variety of foods available to you.	1	2	3	4	5	6	7
9)	Your parents provided you with a well-balanced diet, which occasionally included candy or snacks.	1	2	3	4	5	6	7
10)	Your parents made sure that you did not eat too many high-fat foods.	1	2	3	4	5	6	7

The following statements ask about how your parents managed your food intake when you were a child living in their home. Please rate how strongly you agree with each of the following statements using the 7-point scale (1 = strongly disagree, 7 = strongly agree).

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
11) Your parents made sure that you did not eat too many sweets (candy, ice cream, cake, or pastries).	1	2	3	4	5	6	7
12) Your parents made sure that you did not eat too much of your favourite foods.	1	2	3	4	5	6	7
13) Your parents intentionally kept some foods out of your reach.	1	2	3	4	5	6	7
14) Your parents offered sweets (candy, ice cream, cake, pastries) to you as a reward for good behaviour.	1	2	3	4	5	6	7
15) You parents offered you your favourite foods in exchange for good behaviour	1	2	3	4	5	6	7
16) Your parents thought that if they did not guide or regulate your eating, you would eat too many junk foods.	1	2	3	4	5	6	7
17) Your parents thought that if they did not guide or regulate your eating, you would eat too much of your favourite foods.	1	2	3	4	5	6	7
18) Your parents always made you eat all of the food on your plate.	1	2	3	4	5	6	7
19) Your parents were careful to make sure you ate enough.	1	2	3	4	5	6	7
20) If you said to your parents, “I’m not hungry”, they would have tried to get you to eat anyway.	1	2	3	4	5	6	7
21) Your parents believed that if they did not guide or regulate your eating, you would eat much less than you should.	1	2	3	4	5	6	7

Family Weight Focus and Acceptance of Being Overweight
(Boyd, J.L., Woody, E.Z., & La Guardia, J.)

Please rate how much you agree with each of the followings statements about your family members. If you have more than one sibling, please think about the sibling who is closest in age to you when answering the questions about siblings. If you have no siblings (are an only child) please leave questions about siblings blank.

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1) Your mother feels that it would be acceptable for her to be overweight.	1	2	3	4	5	6	7
2) Your mother is very watchful of her weight.	1	2	3	4	5	6	7
3) It is important to your mother to be thin.	1	2	3	4	5	6	7
4) It is important to your mother that her appearance be physically attractive to others.	1	2	3	4	5	6	7
5) Your mother's weight tends to go up and down over time.	1	2	3	4	5	6	7
6) Your father feels that it would be acceptable for him to be overweight.	1	2	3	4	5	6	7
7) Your father is very watchful of his weight.	1	2	3	4	5	6	7
8) It is important to your father to be thin.	1	2	3	4	5	6	7
9) It is important to your father that his appearance be physically attractive to others.	1	2	3	4	5	6	7
10) Your father's weight tends to go up and down over time.	1	2	3	4	5	6	7
11) Your sibling feels that it would be acceptable for him/her to be overweight.	1	2	3	4	5	6	7
12) Your sibling is very watchful of his/her weight.	1	2	3	4	5	6	7
13) It is important to your sibling to be thin.	1	2	3	4	5	6	7
14) It is important to your sibling that his/her appearance be physically attractive to others.	1	2	3	4	5	6	7
15) Your sibling's weight tends to go up and down over time.	1	2	3	4	5	6	7

Family Weight Focus
(Boyd, J.L., Woody, E.Z., & La Guardia, J.)

Please circle the number corresponding to your answer for the following questions. If you have more than one sibling, please answer these questions about siblings based on the brother or sister closest in age to you. If you have no siblings please leave the questions about siblings blank.

1) Does your mother diet?

1 = Yes 2 = No

2) If yes, how committed is your mother to dieting?

1 = Not at all committed
2 = Somewhat committed
3 = Very committed
4 = Strongly committed

3) Does your father diet?

1= Yes 2 = No

4) If yes, how committed is your father to dieting?

1 = Not at all committed
2 = Somewhat committed
3 = Very committed
4 = Strongly committed

5) Does your sibling diet?

1= Yes 2 = No

6) If yes, how committed is your sibling to dieting?

1 = Not at all committed
2 = Somewhat committed
3 = Very committed
4 = Strongly committed

Family Encouragement to Diet
(Boyd, J.L., Woody, E.Z., & La Guardia, J.)

7) Do you feel that your mother would approve of you dieting to lose weight?

1 = No 2 = Maybe 3 = Yes

8) Do you feel that your father would approve of you dieting to lose weight?

1 = No 2 = Maybe 3 = Yes

9) Do you feel that your sibling would approve of you dieting to lose weight?

1 = No 2 = Maybe 3 = Yes

10) Has your mother told you that you should diet to lose weight?

1 = Never
2 = Once or twice
3 = Several times
4 = Frequently

11) Has your father told you that you should diet to lose weight?

1 = Never
2 = Once or twice
3 = Several times
4 = Frequently

12) Has your sibling told you that you should diet to lose weight?

1 = Never
2 = Once or twice
3 = Several times
4 = Frequently

Peer Weight Focus
(Boyd, J.L., Woody, E.Z., & La Guardia, J.)

Please answer the following questions about your friends' dieting behaviours. Circle the answer that most applies to your friend group.

1) Do you feel that many of your friends diet? Yes No

2) **IF YES**, how committed are your friends to dieting?

1 = Not at all committed
2 = Somewhat committed
3 = Very committed
4 = Strongly committed

3) How many of your friends have been on a diet at least once in the last year?

1 = None
2 = A few
3 = Half
4 = Most
5 = All

4) Have your friends told you that you should diet to lose weight?

1 = Never
2 = Once or twice
3 = Several times
4 = Frequently

5) Do you feel that your friends would approve of you dieting to lose weight?

1 = No
2 = Maybe
3 = Yes

Eating Disorder Inventory (EDI)
(Garner, D.M. & Olmsted, M.P., & Polivy, J., 1983)

Please rate on the 6-point scale how often each of the following statements applies to you (1 = Never, 6 = Always).

		Never	Rarely	Sometimes	Often	Usually	Always
1)	I eat sweets and carbohydrates without feeling nervous.	1	2	3	4	5	6
2)	I think that my stomach is too big.	1	2	3	4	5	6
3)	I wish that I could return to the security of childhood.	1	2	3	4	5	6
4)	I eat when I am upset.	1	2	3	4	5	6
5)	I stuff myself with food.	1	2	3	4	5	6
6)	I wish that I could be younger	1	2	3	4	5	6
7)	I think about dieting.	1	2	3	4	5	6
8)	I get frightened when my feelings are too strong.	1	2	3	4	5	6
9)	I think that my thighs are too large.	1	2	3	4	5	6
10)	I feel ineffective as a person.	1	2	3	4	5	6
11)	I feel extremely guilty after overeating.	1	2	3	4	5	6
12)	I think that my stomach is just the right size.	1	2	3	4	5	6
13)	Only outstanding performance is good enough in my family.	1	2	3	4	5	6
14)	The happiest time in life is when you are a child.	1	2	3	4	5	6
15)	I am open about my feelings.	1	2	3	4	5	6
16)	I am terrified of gaining weight.	1	2	3	4	5	6
17)	I trust others.	1	2	3	4	5	6
18)	I feel alone in the world.	1	2	3	4	5	6
19)	I feel satisfied with the shape of my body.	1	2	3	4	5	6
20)	I feel generally in control of things in my life.	1	2	3	4	5	6
21)	I get confused about what emotion I am feeling.	1	2	3	4	5	6

Please rate on the 6-point scale how often each of the following statements applies to you (1 = Never, 6 = Always).

	Never	Rarely	Sometimes	Often	Usually	Always
22) I would rather be an adult than a child.	1	2	3	4	5	6
23) I can communicate with others easily.	1	2	3	4	5	6
24) I wish I were someone else.	1	2	3	4	5	6
25) I exaggerate or magnify the importance of weight.	1	2	3	4	5	6
26) I can clearly identify what emotion I am feeling.	1	2	3	4	5	6
27) I feel inadequate.	1	2	3	4	5	6
28) I have gone on eating binges where I felt that I could not stop.	1	2	3	4	5	6
29) As a child, I tried very hard to avoid disappointing my parents and teachers.	1	2	3	4	5	6
30) I have close relationships.	1	2	3	4	5	6
31) I like the shape of my buttocks.	1	2	3	4	5	6
32) I am preoccupied with the desire to be thinner.	1	2	3	4	5	6
33) I don't know what is going on inside me.	1	2	3	4	5	6
34) I have trouble expressing my emotions to others.	1	2	3	4	5	6
35) The demands of adulthood are too great.	1	2	3	4	5	6
36) I hate being less than best at things.	1	2	3	4	5	6
37) I feel secure about myself.	1	2	3	4	5	6
38) I think about bingeing (over-eating).	1	2	3	4	5	6
39) I feel happy that I am not a child anymore.	1	2	3	4	5	6
40) I get confused as to whether or not I am hungry.	1	2	3	4	5	6
41) I have a low opinion of myself.	1	2	3	4	5	6
42) I feel that I can achieve my standards.	1	2	3	4	5	6
43) My parents have expected excellence of me.	1	2	3	4	5	6

Please rate on the 6-point scale how often each of the following statements applies to you (1 = Never, 6 = Always).

	Never	Rarely	Sometimes	Often	Usually	Always
44) I worry that my feelings will get out of control.	1	2	3	4	5	6
45) I think my hips are too big.	1	2	3	4	5	6
46) I eat moderately in front of others and stuff myself when they're gone.	1	2	3	4	5	6
47) I feel bloated after eating a normal meal.	1	2	3	4	5	6
48) I feel that people are happiest when they are children.	1	2	3	4	5	6
49) If I gain a pound, I worry that I will keep gaining.	1	2	3	4	5	6
50) I feel that I am a worthwhile person.	1	2	3	4	5	6
51) When I am upset, I don't know if I am sad, frightened, or angry.	1	2	3	4	5	6
52) I feel that I must do things perfectly or not do them at all.	1	2	3	4	5	6
53) I have the thought of trying to vomit in order to lose weight.	1	2	3	4	5	6
54) I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).	1	2	3	4	5	6
55) I think that my thighs are just the right size.	1	2	3	4	5	6
56) I feel empty inside (emotionally).	1	2	3	4	5	6
57) I can talk about personal thoughts or feelings.	1	2	3	4	5	6
58) The best years of your life are when you become an adult.	1	2	3	4	5	6
59) I think my buttocks are too large.	1	2	3	4	5	6
60) I have feelings I can't quite identify.	1	2	3	4	5	6
61) I eat or drink in secrecy.	1	2	3	4	5	6
62) I think that my hips are just the right size.	1	2	3	4	5	6
63) I have extremely high goals.	1	2	3	4	5	6
64) When I am upset, I worry that I will start eating.	1	2	3	4	5	6

Regulation of Eating Behaviours Scale (REBS)
(Pelletier, L.G., Dion, S.C., Slovinec-D'Angelo, & Reid, R., 2004).

Listed below are several statements concerning possible reasons why people might try to regulate their eating behaviours (i.e., trying to "eat healthy", or paying attention to their eating habits). Using the scale from 1-7 below, please indicate the degree to which you agree or disagree with each of the following reasons for why you regulate your eating.

Why are you regulating your eating behaviour?

		Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
1)	I believe it will eventually allow me to feel better.	1	2	3	4	5	6	7
2)	Eating healthy is an integral part of my life.	1	2	3	4	5	6	7
3)	It is fun to create meals that are good for my health.	1	2	3	4	5	6	7
4)	I don't want to be ashamed of how I look.	1	2	3	4	5	6	7
5)	Other people insist that I do.	1	2	3	4	5	6	7
6)	I don't really know. I truly have the impression that I'm wasting my time.	1	2	3	4	5	6	7
7)	I believe it's a good thing I can do to feel better about myself in general.	1	2	3	4	5	6	7
8)	Eating healthy is part of the way I have chosen to live my life.	1	2	3	4	5	6	7
9)	I like to find new ways to create meals that are good for my health.	1	2	3	4	5	6	7
10)	I don't know why I bother.	1	2	3	4	5	6	7
11)	Other people close to me will be upset if I don't.	1	2	3	4	5	6	7
12)	I feel I must absolutely be thin.	1	2	3	4	5	6	7

Listed below are several statements concerning possible reasons why people might try to regulate their eating behaviours (i.e., trying to "eat healthy", or paying attention to their eating habits). Using the scale from 1-7 below, please indicate the degree to which you agree or disagree with each of the following reasons for why you regulate your eating.

Why are you regulating your eating behaviour?

	Strongly Disagree	Mostly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Mostly Agree	Strongly Agree
13) I take pleasure in fixing healthy meals.	1	2	3	4	5	6	7
14) I can't really see what I'm getting out of it.	1	2	3	4	5	6	7
15) Regulating my eating behaviours has become a fundamental part of who I am.	1	2	3	4	5	6	7
16) People around me nag me to do it.	1	2	3	4	5	6	7
17) It is a good idea to try to regulate my eating behaviours.	1	2	3	4	5	6	7
18) I would feel ashamed of myself if I was not eating healthy.	1	2	3	4	5	6	7
19) I don't know. I can't see how my efforts to eat healthy are helping my health situation.	1	2	3	4	5	6	7
20) It is a way to ensure long-term health benefits.	1	2	3	4	5	6	7
21) I would be humiliated if I was not in control of my eating behaviours.	1	2	3	4	5	6	7
22) It is expected of me.	1	2	3	4	5	6	7
23) For the satisfaction of eating healthy.	1	2	3	4	5	6	7
24) Eating healthy is congruent with other important aspects of my life.	1	2	3	4	5	6	7

Body Shape Questionnaire (BSQ)
Cooper, P. J., Taylor, M. J., Cooper, Z. & Fairburn, C.G. (1986)

We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right.

	Never	Rarely	Sometimes	Often	Usually	Always
1) Has feeling bored made you brood about your shape?	1	2	3	4	5	6
2) Have you been so worried about your shape that you have been feeling you ought to diet?	1	2	3	4	5	6
3) Have you thought that your thighs, hips or bottom are too large for the rest of you?	1	2	3	4	5	6
4) Have you been afraid that you might become fat (or fatter)?	1	2	3	4	5	6
5) Have you worried about your flesh not being firm enough?	1	2	3	4	5	6
6) Has feeling full (e.g. after eating a large meal) made you feel fat?	1	2	3	4	5	6
7) Have you felt so bad about your shape that you have cried?	1	2	3	4	5	6
8) Have you avoided running because your flesh might wobble?	1	2	3	4	5	6
9) Has being with thin women made you feel self-conscious about your shape?	1	2	3	4	5	6
10) Have you worried about your thighs spreading out when sitting down?	1	2	3	4	5	6
11) Has eating even a small amount of food made you feel fat?	1	2	3	4	5	6
12) Have you noticed the shape of other women and felt that your own shape compared unfavourably?	1	2	3	4	5	6
13) Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?	1	2	3	4	5	6
14) Has being naked, such as when taking a bath, made you feel fat?	1	2	3	4	5	6
15) Have you avoided wearing clothes which make you particularly aware of the shape of your body?	1	2	3	4	5	6
16) Have you imagined cutting off fleshy areas of your body?	1	2	3	4	5	6

We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right.

	Never	Rarely	Sometimes	Often	Usually	Always
17) Has eating sweets, cakes, or other high calorie foods made you feel fat?	1	2	3	4	5	6
18) Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?	1	2	3	4	5	6
19) Have you felt excessively large and rounded?	1	2	3	4	5	6
20) Have you felt ashamed of your body?	1	2	3	4	5	6
21) Has worry about your shape made you diet?	1	2	3	4	5	6
22) Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?	1	2	3	4	5	6
23) Have you thought that you are in the shape you are because you lack self-control?	1	2	3	4	5	6
24) Have you worried about other people seeing rolls of fat around your waist or stomach?	1	2	3	4	5	6
25) Have you felt that it is not fair that other women are thinner than you?	1	2	3	4	5	6
26) Have you vomited in order to feel thinner?	1	2	3	4	5	6
27) When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?	1	2	3	4	5	6
28) Have you worried about your flesh being dimply?	1	2	3	4	5	6
29) Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?	1	2	3	4	5	6
30) Have you pinched areas of your body to see how much fat there is?	1	2	3	4	5	6
31) Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?	1	2	3	4	5	6
32) Have you taken laxatives in order to feel thinner?	1	2	3	4	5	6
33) Have you been particularly self-conscious about your shape when in the company of other people?	1	2	3	4	5	6
34) Has worry about your shape made you feel you ought to exercise?	1	2	3	4	5	6

Stressful Events and Coping Inventory

Stressor lists adapted from the PERI Life Events Scale (Dohrenwend, B.S., Krasnoff, L., Askenasy, A.R., & Dohrenwend, B.P., 1978)

Academic Stressors

The following is a list of events that may occur in the academic life of a university student. Please read over this list and indicate whether or not you have experienced each event during the **last 7 days**.

Yes	No	Increase in amount of coursework or reading required for the week.
Yes	No	Received a poorer grade than expected on a test, midterm, or exam.
Yes	No	Received a much poorer grade than expected on an essay or other assignment
Yes	No	Increased difficulty balancing time for academic and social activities.
Yes	No	Grappled with choosing a major or career goal.
Yes	No	Worried about failing one or more courses.
Yes	No	Caught plagiarizing an essay or assignment.
Yes	No	Caught cheating on a test or exam.
Yes	No	Accused of cheating or plagiarizing.
Yes	No	Preparing for and writing midterms or major tests.
Yes	No	Many assignments due around the same time.
Yes	No	Realized that responsibilities in extracurricular activities interfered with schoolwork.
Yes	No	Difficulty understanding content of a course.
Yes	No	Teaching assistant or professor did not provide adequate assistance.
Yes	No	Received poor feedback from a professor or teaching assistant.
Yes	No	Concerned that you will fail out of school.
Yes	No	Workload was too heavy for you to keep up.
Yes	No	Handed in an essay or other assignment late.
Yes	No	Upset by a test, essay, or other assignment grade.
Yes	No	Dropped a course.
Yes	No	Did not have enough time to prepare adequately for a test, presentation, assignment, etc.
Yes	No	Faked or exaggerated severity of an illness to postpone an important test or exam.
Yes	No	Poor health or illness caused you to fall behind in schoolwork.

Thinking of these and similar stressors, how stressful was your academic life over the last 7 days? Choose one only.

1 = My academic life was not very stressful
2 = My academic life was a little stressful
3 = My academic life was moderately stressful
4 = My academic life was very stressful
5 = My academic life was extremely stressful

Academic Coping Measure

Adapted from the Brief Cope (Carver, C.S., 1997)

Think about your **academic stressors**, and how you reacted to them. Then indicate how often you did each of the following behaviours in response to your academic stressors over the last 7 days.

Subjects responded to the questions according to the following scale:

Not at all = 1 Usually = 2 Often = 3 Sometimes = 4 Never = 5

1) I've been concentrating my efforts on doing something about my **academic stressors**.
2) I've been learning to live with these stressors.
3) I've been making fun of the stressors.
4) I've been doing something to think about the stressors less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
5) I've been giving up the attempt to cope.
6) I've been expressing my negative feelings.
7) I've been using food to make myself feel better.
8) I've been blaming myself for things that happened.
9) I've been trying to come up with a strategy about what to do regarding my stressors.
10) I've been refusing to believe that these stressors have happened.
11) I've been making jokes about the stressors.
12) I've been trying to get advice or help from other people about what to do.
13) I've been turning to other work or other activities to take my mind off these stressors.
14) I've been saying to myself, "this isn't real."
15) I've been saying things to let my unpleasant feelings escape.
16) I've been using alcohol or other drugs to make myself feel better.
17) I've been accepting the implications of these stressors.
18) I've been giving up trying to deal with these stressors.
19) I've been criticizing myself.
20) I've been getting emotional support from others.

Social and Friendship Stressors

The following is a list of events that may occur in the social life of a university student. Please read over this list and indicate whether or not you have experienced each event each event during the **last 7 days**.

Yes	No	Rejected from participation in desired extracurricular activities (e.g., sorority, sports, club, etc.).
Yes	No	Rejected by a new friend or acquaintance.
Yes	No	More distance between yourself and a friend due to an argument.
Yes	No	Missed a friend or friends because of long-distance.
Yes	No	Provided more emotional support to a friend who was having personal problems.
Yes	No	Realized necessity to make new friends because you're feeling lonely.
Yes	No	Few people came to a party or event that you planned.
Yes	No	Friend/s were upset because they felt you were not spending enough time with them.
Yes	No	Friend/s were not supportive when you went to them with your problems.
Yes	No	Tried to create more distance between yourself and a friend (e.g. by avoiding them, blocking them on instant messenger, not replying to their emails, etc.).
Yes	No	Had little time for social activities.
Yes	No	Had an argument with a friend.
Yes	No	Felt torn between spending time with two different friends or groups.
Yes	No	Friend/s didn't show up at a previously agreed upon meeting place.
Yes	No	Friend/s excluded you from plans.
Yes	No	Felt that you have few friends.
Yes	No	Activity run by your group was unsuccessful (e.g., team lost game, few people attended club meeting, etc.)
Yes	No	Concerned about a friend's self-destructive behaviours (e.g. physical self-harm, excessive drinking, unprotected sex, etc.)
Yes	No	Death of a close friend.
Yes	No	Close friend incapacitated or hospitalized because of physical or emotional problems.
Yes	No	Good friend attempted suicide.

Thinking of these and similar stressors, how stressful was your social life over the **last 7 days**? Choose one only.

1 = My social life was not very stressful
2 = My social life was a little stressful
3 = My social life was moderately stressful
4 = My social life was very stressful
5 = My social life was extremely stressful

Social and Friendship Coping Measure
Adapted from the Brief Cope (Carver, C.S., 1997)

Think about your **social stressors**, and how you reacted to them. Then indicate how often you did each of the following behaviours in response to your academic stressors over the last 7 days.

Subjects responded to the questions according to the following scale:

Not at all = 1 Usually = 2 Often = 3 Sometimes = 4 Never = 5

1) I've been concentrating my efforts on doing something about my **social stressors**.
2) I've been learning to live with these stressors.
3) I've been making fun of the stressors.
4) I've been doing something to think about the stressors less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
5) I've been giving up the attempt to cope.
6) I've been expressing my negative feelings.
7) I've been using food to make myself feel better.
8) I've been blaming myself for things that happened.
9) I've been trying to come up with a strategy about what to do regarding my stressors.
10) I've been refusing to believe that these stressors have happened.
11) I've been making jokes about the stressors.
12) I've been trying to get advice or help from other people about what to do.
13) I've been turning to other work or other activities to take my mind off these stressors.
14) I've been saying to myself, "this isn't real."
15) I've been saying things to let my unpleasant feelings escape.
16) I've been using alcohol or other drugs to make myself feel better.
17) I've been accepting the implications of these stressors.
18) I've been giving up trying to deal with these stressors.
19) I've been criticizing myself.
20) I've been getting emotional support from others.

Family Stressors

The following is a list of events that may occur in the family life of a university student. Please read over this list and indicate whether or not you have experienced each event during the **last 7 days**.

Yes	No	Had an argument with a sibling.
Yes	No	Had an argument with parent or parents.
Yes	No	Your parents nagged you or were intrusive (about school, relationships, etc.)
Yes	No	Increased tension with a step-parent.
Yes	No	Sibling experienced more problems.
Yes	No	Avoided contact with parents.
Yes	No	Decided for the first time not to go to parental home for a visit (if living away from home).
Yes	No	You received little or no contact from family members.
Yes	No	Difficulty dividing time between your parents.
Yes	No	Relatives made you feel guilty for missing a family occasion.
Yes	No	You had less time for important relatives and felt guilty.
Yes	No	Parents or other relatives expressed disapproval regarding your lifestyle.
Yes	No	Parents changed residence.
Yes	No	Parents argued with each other more.
Yes	No	A parent started a new romantic relationship.
Yes	No	Parents limited the amount of funds they would provide for you.
Yes	No	Lied to parents about school performance.
Yes	No	Lied to parents about activities or lifestyle.
Yes	No	Parents informed you they were separating or getting divorced.
Yes	No	A parent was seriously ill.
Yes	No	Death of parent or guardian.
Yes	No	A member of your family died.

Thinking of these and similar stressors, how stressful was your family life over the **last 7 days**? Choose one only.

1 = My family life was not very stressful
2 = My family life was a little stressful
3 = My family life was moderately stressful
4 = My family life was very stressful
5 = My family life was extremely stressful

Family Coping Measure

Adapted from the Brief Cope (Carver, C.S., 1997)

Think about your **family stressors**, and how you reacted to them. Then indicate how often you did each of the following behaviours in response to your academic stressors over the last 7 days.

Subjects responded to the questions according to the following scale:

Not at all = 1 Usually = 2 Often = 3 Sometimes = 4 Never = 5

1) I've been concentrating my efforts on doing something about my **family stressors**.
2) I've been learning to live with these stressors.
3) I've been making fun of the stressors.
4) I've been doing something to think about the stressors less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
5) I've been giving up the attempt to cope.
6) I've been expressing my negative feelings.
7) I've been using food to make myself feel better.
8) I've been blaming myself for things that happened.
9) I've been trying to come up with a strategy about what to do regarding my stressors.
10) I've been refusing to believe that these stressors have happened.
11) I've been making jokes about the stressors.
12) I've been trying to get advice or help from other people about what to do.
13) I've been turning to other work or other activities to take my mind off these stressors.
14) I've been saying to myself, "this isn't real."
15) I've been saying things to let my unpleasant feelings escape.
16) I've been using alcohol or other drugs to make myself feel better.
17) I've been accepting the implications of these stressors.
18) I've been giving up trying to deal with these stressors.
19) I've been criticizing myself.
20) I've been getting emotional support from others.

Romantic Stressors

The following is a list of events that may occur in the romantic life of a university student. Please read over this list and indicate whether or not you have experienced each event during the **last 7 days**.

Yes	No	Found out that someone you're interested in is already in a relationship.
Yes	No	A friend or casual date wanted to start a romantic relationship, but you're not interested.
Yes	No	Turned down a request for a date.
Yes	No	You were attracted to someone who was not interested in you.
Yes	No	Felt pressure to decide between two people you have been dating casually.
Yes	No	Asked someone to go out with you and they did not want to.
Yes	No	Your friend went out with someone you were interested in.
Yes	No	You went out with someone a friend was interested in.
Yes	No	You lost interest in a potential partner after spending more time with them.
Yes	No	Someone you're interested in seemed to avoid you.
Yes	No	You entered a new relationship with romantic partner.
Yes	No	You had an argument with your partner.
Yes	No	Partner forgot about an important date (like an anniversary, your birthday, etc)
Yes	No	Partner was insensitive when you wanted to discuss your problems.
Yes	No	Physical distance between you and your partner caused distress.
Yes	No	Partner had an argument with your friend/s.
Yes	No	Tried to decide whether you should break up with your romantic partner.
Yes	No	You were too busy to spend as much time with your partner as you want.
Yes	No	Your partner had less time for you than usual.
Yes	No	Your partner was more interested in spending time with friends than with you.
Yes	No	You lied to your partner.
Yes	No	Partner lied to you.
Yes	No	Parents pressured you to break up with you romantic partner.
Yes	No	You felt tempted to cheat on your partner.
Yes	No	You cheated on your partner.
Yes	No	Found out that your partner cheated on you.
Yes	No	You broke up with your romantic partner.
Yes	No	Your partner broke up with you.
Yes	No	An ex-partner wanted to get back together with you but you're not interested.

Thinking of these and similar stressors, how stressful was your romantic life over the **last 7 days**? Choose one only.

1 = My romantic life was not very stressful
2 = My romantic life was a little stressful
3 = My romantic life was moderately stressful
4 = My romantic life was very stressful
5 = My romantic life was extremely stressful

Romantic Coping Measure
Adapted from the Brief Cope (Carver, C.S., 1997)

Think about your **romantic stressors**, and how you reacted to them. Then indicate how often you did each of the following behaviours in response to your academic stressors over the last 7 days.

Subjects responded to the questions according to the following scale:

Not at all = 1 Usually = 2 Often = 3 Sometimes = 4 Never = 5

21) I've been concentrating my efforts on doing something about my **romantic stressors**.
22) I've been learning to live with these stressors.
23) I've been making fun of the stressors.
24) I've been doing something to think about the stressors less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.
25) I've been giving up the attempt to cope.
26) I've been expressing my negative feelings.
27) I've been using food to make myself feel better.
28) I've been blaming myself for things that happened.
29) I've been trying to come up with a strategy about what to do regarding my stressors.
30) I've been refusing to believe that these stressors have happened.
31) I've been making jokes about the stressors.
32) I've been trying to get advice or help from other people about what to do.
33) I've been turning to other work or other activities to take my mind off these stressors.
34) I've been saying to myself, "this isn't real."
35) I've been saying things to let my unpleasant feelings escape.
36) I've been using alcohol or other drugs to make myself feel better.
37) I've been accepting the implications of these stressors.
38) I've been giving up trying to deal with these stressors.
39) I've been criticizing myself.
40) I've been getting emotional support from others.

Weekly Eating Behaviours Scale (WEBS)
(Boyd, J.L., Woody, E.Z., & La Guardia, J.)

Rate on the 5-point scale the number of days you engaged in each of the following behaviours over the last seven days.

	Not at all this week	One or two days this week	Three or four days this week	Five or six days this week	Everyday
1) Skipped a meal to reduce caloric intake.	1	2	3	4	5
2) Ate a large quantity of food with little awareness that you were eating so much.	1	2	3	4	5
3) Ate late at night because you had little time to eat during the day.	1	2	3	4	5
4) Ate fresh fruit and/or vegetables as snacks.	1	2	3	4	5
5) Ate food at a party with a group of friends or family.	1	2	3	4	5
6) Exercised until a goal number of calories were burned.	1	2	3	4	5
7) Used diet drinks or bars in place of meals	1	2	3	4	5
8) Could not stop eating although you wanted to.	1	2	3	4	5
9) Missed a meal because you were running late for class, too busy studying, or preparing an assignment.	1	2	3	4	5
10) Prepared meals and snacks to take to school with you.	1	2	3	4	5
11) Ate at a restaurant with friends or family.	1	2	3	4	5
12) Ate less in anticipation of an occasion that would involve eating a lot.	1	2	3	4	5
13) Kept a record of the amount of fat, carbohydrates, protein, or calories that you consumed each day.	1	2	3	4	5
14) Ate to comfort yourself (for e.g., because you were feeling sad or lonely).	1	2	3	4	5
15) Ate food straight out of a container because you were in a rush.	1	2	3	4	5

Rate on the 5-point scale the number of days you engaged in each of the following behaviours over the last seven days.

	Not at all this week	One or two days this week	Three or four days this week	Five or six days this week	Everyday
16) Prepared a healthy meal for yourself.	1	2	3	4	5
17) Avoided eating meals with other people.	1	2	3	4	5
18) Skipped a meal to compensate for over-eating at a meal earlier in the day or the previous day.	1	2	3	4	5
19) Chose a low-fat or low-calorie food although you prefer the higher fat or higher calorie food.	1	2	3	4	5
20) Had overwhelming cravings for foods you know are bad for you.	1	2	3	4	5
21) Ate sugary foods or caffeinated beverages late at night to help you stay awake.	1	2	3	4	5
22) Chose foods from different food groups.	1	2	3	4	5
23) Ate snacks (like chips or popcorn) while relaxing with friends.	1	2	3	4	5
24) Consumed fewer calories following a day where you over-ate.	1	2	3	4	5
25) Used an over-the-counter product (for e.g., caffeine, diet pills, herbal or naturopathic products, laxatives, diuretics, etc.) to aid weight loss.	1	2	3	4	5
26) Snacked as an excuse to avoid an unpleasant situation when you weren't really hungry.	1	2	3	4	5
27) Bought a fast-food meal because you were pressed for time.	1	2	3	4	5
28) Stopped eating when full, even though the food was very tasty and you wanted more.	1	2	3	4	5
29) Ate with your friends to be sociable even though you weren't very hungry.	1	2	3	4	5
30) Exercised to compensate for over-eating or breaking your diet.	1	2	3	4	5
31) Didn't eat because you were upset about some life circumstances.	1	2	3	4	5

Table 1

Results of the Factor Analysis of Weekly Eating Behaviours Scale (WEBS) (N=137)

Items	1	2	3	4
Restriction (a = .81)				
Skipped a meal to compensate for over-eating at a meal earlier in the day or the previous day	.80			
Consumed fewer calories following a day where you over-ate	.74			
Skipped a meal to reduce caloric intake	.72			
Chose a low-fat or low-calorie food although you prefer the higher fat or higher calorie food	.57			
Kept a record of the amount of fat, carbohydrates, protein, or calories that you consumed each day	.57			
Ate less in anticipation of an occasion that would involve eating a lot	.48			
Used diet drinks or bars in place of meals	.38			
Avoided eating meals with other people	.29			
Irregular Eating (a = .77)				
Bought a fast-food meal because you were pressed for time		.69		
Missed a meal because you were running late for class, too busy studying, or preparing an assignment		.65		
Ate food straight out of a container because you were in a rush		.64		
Ate late at night because you had little time to eat during the day		.59		

Table 1 Continued

Items	1	2	3	4
Dysregulation (a = .77)				
Ate a large quantity of food with little awareness that you were eating so much			.92	
Could not stop eating although you wanted to			.84	
Had overwhelming cravings for foods you know are bad for you			.62	
Ate to comfort yourself (for e.g., because you were feeling sad or lonely)			.50	
Snacked as an excuse to avoid an unpleasant situation when you weren't really hungry			.45	
Stopped eating when full, even though the food was very tasty and you wanted more			-.34	
Healthy Eating (a = .68)				
Chose foods from different food groups				.72
Prepared a healthy meal for yourself				.59
Ate fresh fruit and/or vegetables as snacks				.57
Prepared meals and snacks to take to school with you				.41

Table 2

Intercorrelations Between Subscales of the Weekly Eating Behaviours Scale (WEBS) (N=137)

Subscale	1	2	3	4
1. Dysregulation	--	.32**	.45**	-.08
2. Irregular Eating		--	.37**	.01
3. Restriction			--	.09
4. Healthy Eating				--

Table 3

Results of Factor Analysis for the Adapted Child Feeding Questionnaire (N = 137)

Items	1	2	3	4	5	6
Restricting Sweets (a = .86)						
Your parents kept track of the snack food (potato chips, Doritos, cheese puffs) that you ate as a child	1.05					
Your parents kept track of the sweets (candy, ice cream, cake, pies, pastries) that you ate as a child	.99					
Your parents kept track of the high-fat foods you ate	.81					
Your parents made sure that you did not eat too many sweets (candy, ice cream, cake, or pastries)	.41					
Your parents did not permit unhealthy snacks or junk food to be eaten in their house	.35					
Regulating Intake (a = .78)						
Your parents thought that if they did not guide or regulate your eating, you would eat too much of your favourite foods		.93				
Your parents thought that if they did not guide or regulate your eating, you would eat too many junk foods		.86				
Your parents made sure that you did not eat too much of your favourite foods		.61				
Your parents intentionally kept some foods out of reach		.43				
Concern about Child's Weight (a = .79)						
Your parents were concerned that you would become overweight			.80			
Your parents were concerned about your maintaining a desirable weight			.77			
Your parents were concerned about you eating too much when they were not around			.66			

Table 3 Continued

Items	1	2	3	4	5	6
Encouragement of Healthy Eating (a = .66)						
Your parents provided you with a well-balanced diet, which occasionally included candy or snacks				.79		
Your parents ensured that you had a variety of foods available to you				.76		
Your parents made sure that you did not eat too many high-fat foods				.56		
Pressure to Eat More (a = .71)						
If you said to your parents, "I'm not hungry," they would have tried to get you too eat anyway					.89	
Your parents always made you eat all of the food on your plate					.67	
Your parents believed that if they did not guide or regulate your eating, you would eat much less than you should					.53	
Your parents were careful to make sure you ate enough					.40	
Rewarding Good Behaviour with Food (a = .80)						
Your parents offered you your favourite foods in exchange for good behaviour						1.00
Your parents offered sweets (candy, ice cream, cake, pastries) to you as a reward for good behaviour						.66

Table 4

Results of Factor Analysis for Family Weight Focus and Weight Acceptance (N = 137)

Items	1	2	3	4	5
Mother Weight Focus (a = .74)					
It is important to your mother to be thin	.93				
It is important to your mother that her appearance be physically attractive to others	.88				
Your mother is very watchful of her weight	.56				
Sibling Weight Focus (a = .74)					
It is important to your sibling to be thin		.84			
Your sibling is very watchful of his/her weight		.79			
It is important to your sibling that his/her appearance be physically attractive to others		.75			
Father Weight Focus (a = .70)					
It is important to your father to be thin			.86		
Your father is very watchful of his weight			.65		
It is important to your father that his appearance be physically attractive to others			.42		
Family Weight Acceptance (a = .61)					
Your mother feels that it would be acceptable for her to be overweight				.87	
Your sibling feels that it would be acceptable for him/her to be overweight				.52	
Your father feels that it would be acceptable for him to be overweight				.45	

Table 4 Continued

Items	1	2	3	4	5
Family Weight Fluctuations[a]					
Your mother's weight tends to go up and down over time					.89
Your father's weight tends to go up and down over time					.44
Your sibling's weight tends to go up and down over time					.39

a – the family weight fluctuation items were put on the appropriate Family Weight Focus Scales, and the reliability estimates are provided after this was done

Table 5

Intercorrelations Between Subscales of the Family/Peer Weight Focus and Dieting Items (N = 137)

Subscale	1	2	3	4	5
1. Mother Weight Focus	--	.43**	.39*	-.08	.18*
2. Father Weight Focus		--	.35**	-.07	.13
3. Sibling Weight Focus			--	.03	.33**
4. Weight Acceptance				--	.20*
5. Encouragement to Diet					--

Table 6

Baseline Correlations between WEBS and PAQ (N = 137)

	Dysregulation	Irregular Eating	Restriction	Healthy Eating
Mother permissiveness	-.03	-.11	-.10	.05
Mother authoritarianism	.18*	.16	.23**	-.16
Mother authoritativeness	-.10	-.16	-.18*	.11
Father permissiveness	.22*	.08	.09	.04
Father authoritarianism	-.04	.10	.06	-.17
Father authoritativeness	.07	-.03	.10	.06

Table 7

Baseline Correlations Between Adapted Child Feeding Questionnaire (CFQ-Adapted) and Weekly Eating Behaviours Scale (WEBS) (N = 137)

	Restriction	Irregular Eating	Healthy Eating	Dysregulation
Restricting Sweets	.01	-.04	.17*	-.11
Regulating Intake	.19*	.12	.10	.04
Concern about Weight	.21*	.20*	-.03	.24**
Pressure to Eat More	.07	.02	-.06	.04
Encouraging Healthy Eating	.00	-.21*	.30**	-.12
Rewarding Good Behaviour	.12	.11	.05	.11

Table 8

Baseline Correlations between Current Family Weight Focus & Peer Weight Focus and Weekly Eating Behaviours Scale (WEBS) (N = 137)

	Dysregulation	Irregular Eating	Restriction	Healthy Eating
Mother Weight Focus	.12	.12	.14	.12
Father Weight Focus	.09	.15	.06	-.04
Sibling Weight Focus	.16	.13	.12	-.25**
Family Weight Acceptance	.08	.03	.34**	.02
Encouragement to Diet	.17*	.09	.20*	-.11
Peer Weight Focus	.28**	.26**	.33**	-.12

Table 9.

Testing RAI as the mediator of parental feeding behaviour on current eating behaviour outcomes.

Eating Behaviour	Path C Concern about weight to current eating		Path B RAI to current eating, controlling for concern about weight		Path C' Concern about weight to current eating with RAI as mediator	
	F	β	F	β	F	B
Dysregulated Eating	(1, 134) = 8.11	.24**	(2, 127) = 12.85	-.35***	(1, 127) = .13	.13
Irregular Eating	(1, 134) = 5.27	.20*	(2, 127) = 6.81	-.26**	(1, 127) = 1.72	.12
	Path C Encouraging healthy eating to current eating		Path B RAI to eating behaviour, controlling for encouraging healthy eating		Path C' Encouraging healthy eating to current eating with RAI as mediator	
Healthy Eating	(1, 134) = 12.85	.30***	(2, 127) = 10.50	.27*	(1, 127) = 3.03	.16†
Irregular Eating	(1, 134) = 6.10	-.21*	(2, 127) = 6.30	-.25*	(1, 127) = .80	-.09

Table 10

Overall Fit of Alternative Univariate Models for Each Longitudinal Variable

Variable	Fit Index	Model			
		ALT[1] ρt,t-1 Free	ALT[1] ρt,t-1 Equal	LCM[1]	AR[1]
Healthy Eating	χ2	43.96	52.14	77.86	151.18
	df	29	36	40	28
	p-value	.04	.04	<.001	<.001
	CFI	.97	.96	.91	.72
	ECVI	1.06	0.99	1.19	2.28
Irregular Eating	χ2	64.63	70.99	97.25	175.04
	df	29	36	40	28
	p-value	<.001	<.001	<.001	<.001
	CFI	.89	.90	.83	.56
	ECVI	1.29	1.20	1.41	2.55
Dysregulated Control	χ2	31.07	34.94	61.31	166.52
	df	29	36	40	28
	p-value	.36	.52	.02	<.001
	CFI	.99	1.00	.94	.58
	ECVI	0.91	0.80	1.00	2.46

Table 10 Continued

Variable	Fit Index	Model			
		ALT ρt,t-1 Free	ALT ρt,t-1 Equal	LCM	AR
Restriction[2]	χ2	120.01	128.39	143.88	168.16
	df	31	38	40	28
	p-value	<.001	<.001	<.001	<.001
	CFI	.80	.80	.76	.68
	ECVI	1.86	1.80	1.93	2.47
Perceived Stress[2]	χ2	55.42	67.49	88.02	92.90
	df	31	38	40	28
	p-value	<.01	<.01	<.001	<.001
	CFI	.91	.89	.82	.75
	ECVI	1.14	1.12	1.30	1.63
Objective Stress	χ2	55.84	71.56	124.24	110.02
	df	29	36	40	28
	p-value	<.01	<.001	<.001	<.001
	CFI	.95	.93	.83	.83
	ECVI	1.19	1.21	1.71	1.82

[1] ALT = Autoregressive Latent Trajectory Model
LCM = Latent Curve Model
AR = Autoregressive Model

[2] The ALT Free and ALT Equal models for these two variables produced inadmissible solutions unless the covariances of the Slope Factor with W1 and with the Intercept Factor were set to

zero. Therefore, these parameters were fixed to zero. The difficulty appears to be that for these two variables, the Slope Factor has virtually no variability, which can lead to out-of-range estimates of its covariances.

Table 11

Parameter Estimates for Univariate Models of Each Longitudinal Variable

Healthy Eating
ALT model with ρt,t-1 equal

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	2.201	0.137	<.001
Mean of Slope Factor	0.010	0.013	.42
Variance of Intercept Factor	0.348	0.101	<.001
Variance of Slope Factor	0.007	0.002	.004
Covariance of Intercept & Slope	0.001 (r = .03)	0.011	.90
Average R2 for Ti	.68		
Autoregressive ρt,t-1	–0.047	0.051	.36

Irregular Eating
ALT model with ρt,t-1 equal

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	1.932	0.120	<.001
Mean of Slope Factor	–0.007	0.009	.47
Variance of Intercept Factor	0.205	0.065	.002
Variance of Slope Factor	0.002	0.001	.05
Covariance of Intercept & Slope	–0.001 (r = –.04)	0.007	.88
Average R2 for Ti	.58		
Autoregressive ρt,t-1	–0.033	0.052	.52

Dysregulated Control
ALT model with ρt,t-1 equal

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	1.992	0.111	<.001
Mean of Slope Factor	0.005	0.008	.53
Variance of Intercept Factor	0.072	0.038	.06
Variance of Slope Factor	0.002	0.001	.09
Covariance of Intercept & Slope	0.009 (r = .79)	0.004	.04
Average R2 for Ti	.56		
Autoregressive ρt,t-1	–0.018	0.048	.70

(Table 11 continued)

Dieting
ALT model with ρt,t-1 equal

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	1.135	0.079	<.001
Mean of Slope Factor	0.000	0.005	.93
Variance of Intercept Factor	0.075	0.017	<.001
Variance of Slope Factor	0.000	0.000	.20
Covariance of Intercept & Slope	fixed to 0		
Average R2 for Ti	.60		
Autoregressive ρt,t-1	0.142	0.050	.004

Perceived Stress
ALT model with ρt,t-1 equal

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	6.317	0.549	<.001
Mean of Slope Factor	–0.070	0.039	<.001
Variance of Intercept Factor	1.680	0.481	<.001
Variance of Slope Factor	0.016	0.013	.22
Covariance of Intercept & Slope	1.545 (r = .47)	0.490	.002
Average R2 for Ti	.52		
Autoregressive ρt,t-1	0.226	0.058	<.001

Objective Stress
ALT model with ρt,t-1 free

Parameter	Estimate	Standard Error	p
Mean of Intercept Factor	14.53	5.36	<.001
Mean of Slope Factor	2.76	1.03	.007
Variance of Intercept Factor	16.59	29.77	.58
Variance of Slope Factor	8.77	3.06	.004
Covariance of Intercept & Slope	2.33 (r = .19)	4.99	.64
Average R2 for Ti	.74		
Autoregressive ρ1,0	0.503	0.089	<.001
ρ2,1	0.449	0.087	<.001
ρ3,2	0.396	0.086	<.001
ρ4,3	0.257	0.068	<.001
ρ5,4	0.165	0.065	.01
ρ6,5	0.128	0.081	.12
ρ7,6	–0.041	0.085	.64
ρ8,7	–0.115	0.116	.32

Table 12.

Standardized Regression Weights for Bivariate Model of Restriction and Objective Stress

Predictor	Outcome	Estimate	Standard Error	p
W2 restriction	W3 stress	.114	1.556	.004
W3 restriction	W4 stress	.080	1.556	.004
W4 restriction	W5 stress	.097	1.556	.004
W5 restriction	W6 stress	.094	1.556	.004
W6 restriction	W7 stress	.090	1.556	.004
W7 restriction	W8 stress	.082	1.556	.004
W8 restriction	W9 stress	.067	1.556	.004
W2 stress	W3 restriction	.05	.001	.34
W3 stress	W4 restriction	.04	.001	.34
W4 stress	W5 restriction	.05	.001	.34
W5 stress	W6 restriction	.04	.001	.34
W6 stress	W7 restriction	.05	.001	.34
W7 stress	W8 restriction	.06	.001	.34
W8 stress	W9 restriction	.05	.001	.34

Table 13.

Standardized Regression Weights for Bivariate Model of Dysregulation and Objective Stress

Predictor	Outcome	Estimate	Standard Error	p
W2 dysregulation	W3 stress	-.02	1.13	.59
W3 dysregulation	W4 stress	-.02	1.13	.59
W4 dysregulation	W5 stress	-.02	1.13	.59
W5 dysregulation	W6 stress	-.02	1.13	.59
W6 dysregulation	W7 stress	-.01	1.13	.59
W7 dysregulation	W8 stress	-.02	1.13	.59
W8 dysregulation	W9 stress	-.01	1.13	.59
W2 stress	W3 dysregulation	.11	.001	.03
W3 stress	W4 dysregulation	.10	.001	.03
W4 stress	W5 dysregulation	.12	.001	.03
W5 stress	W6 dysregulation	.13	.001	.03
W6 stress	W7 dysregulation	.10	.001	.03
W7 stress	W8 dysregulation	.14	.001	.03
W8 stress	W9 dysregulation	.11	.001	.03

Figure 1.

Testing the Relative Autonomy Index as a Mediator of the Effect of Parental Feeding Behaviours on Current Eating Behaviours

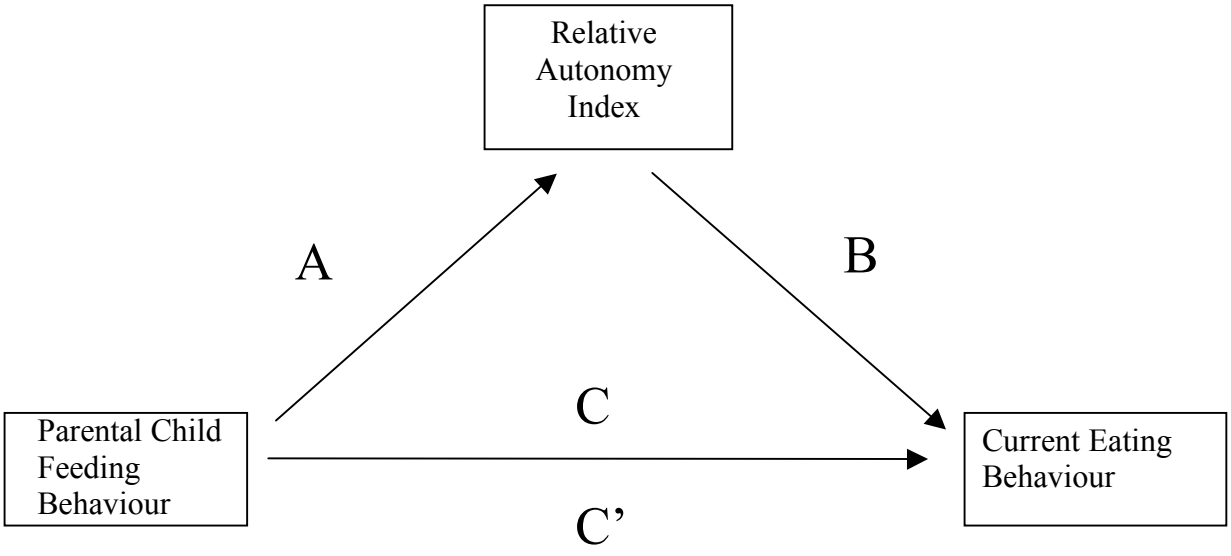
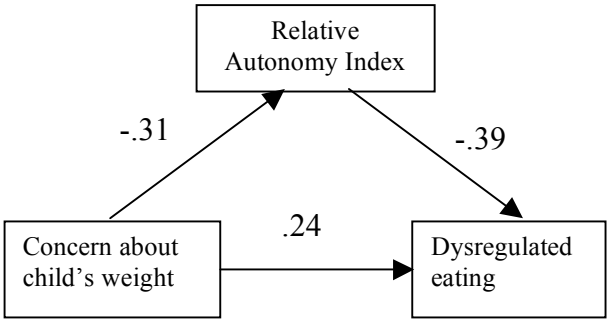
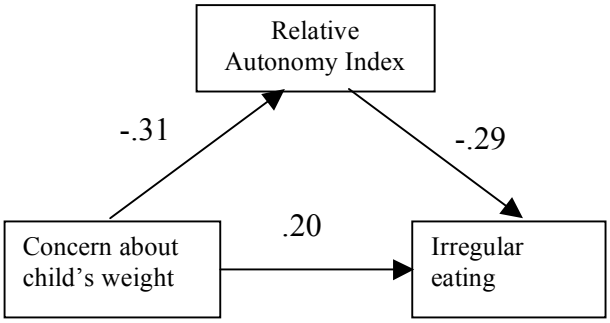


Figure 2.

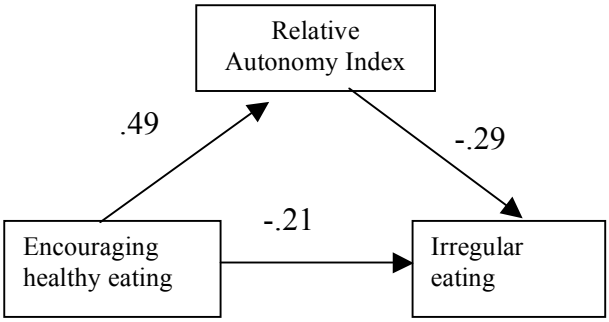
The four significant relationships between between parent child feeding beaviours and current eating behaviours, mediated by the Relative Autonomy Index (RAI)



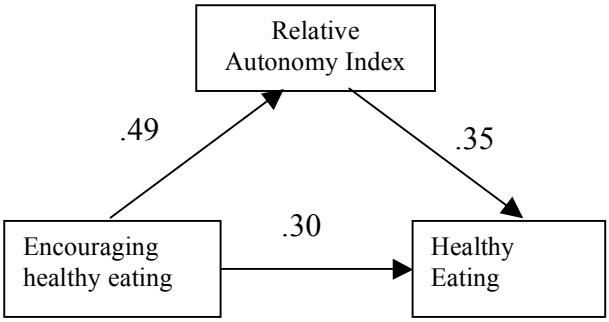
r = .14, z = 2.80, p = .005



r = .12, z = 2.20, p = .028



r = -.10, z = 2.43, p = .015



r = .19, z = 2.53, p = .012

Figure 3.

Restriction and Dysregulation at Week 9 Predicted by Cumulative Perceived Stress and Baseline Restriction and Dysregulation

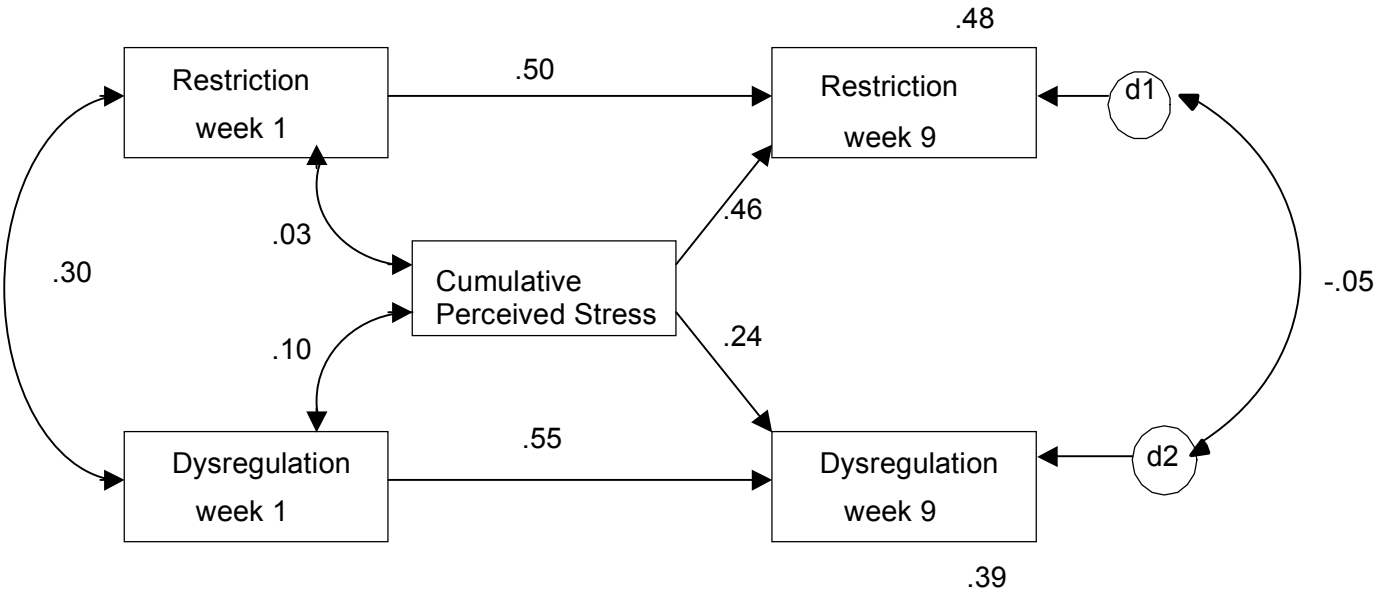
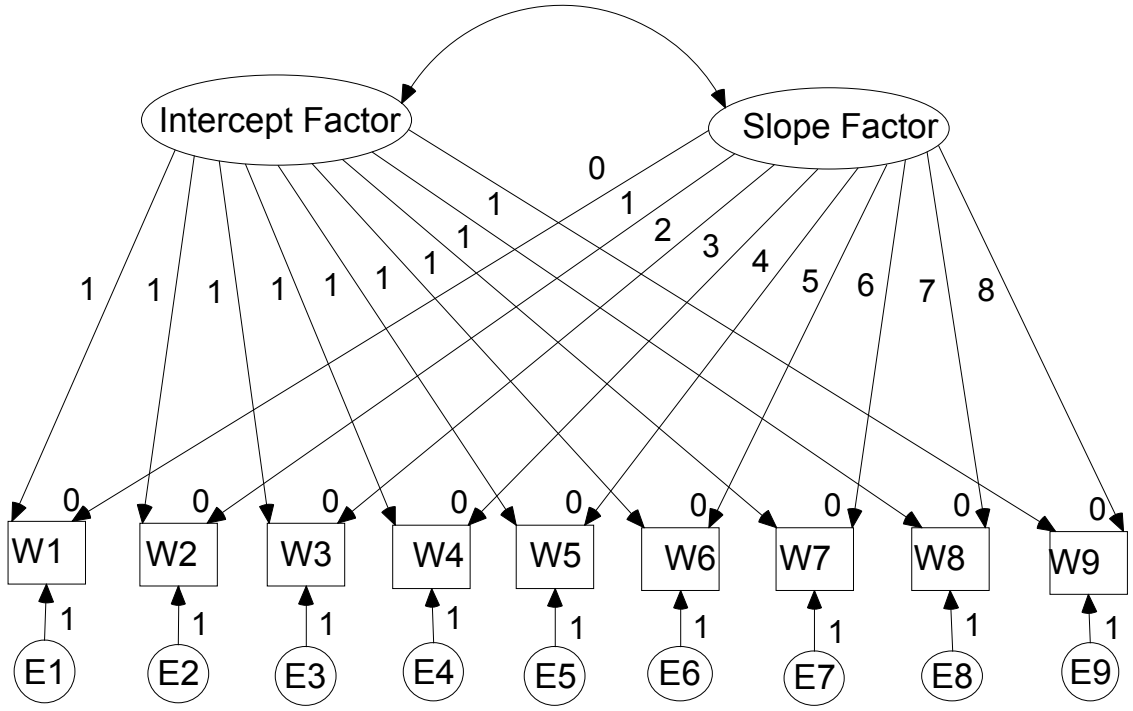


Figure 4.

The Latent Curve Model (LCM) and the Autoregressive Model (AR)

Latent Curve Model



Autoregressive Model

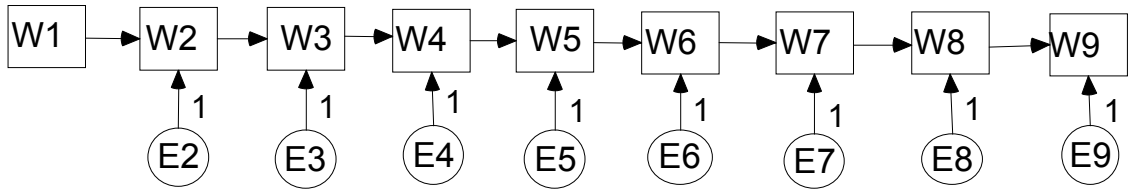


Figure 5

The Autoregressive Latent Trajectory Model (ALT)

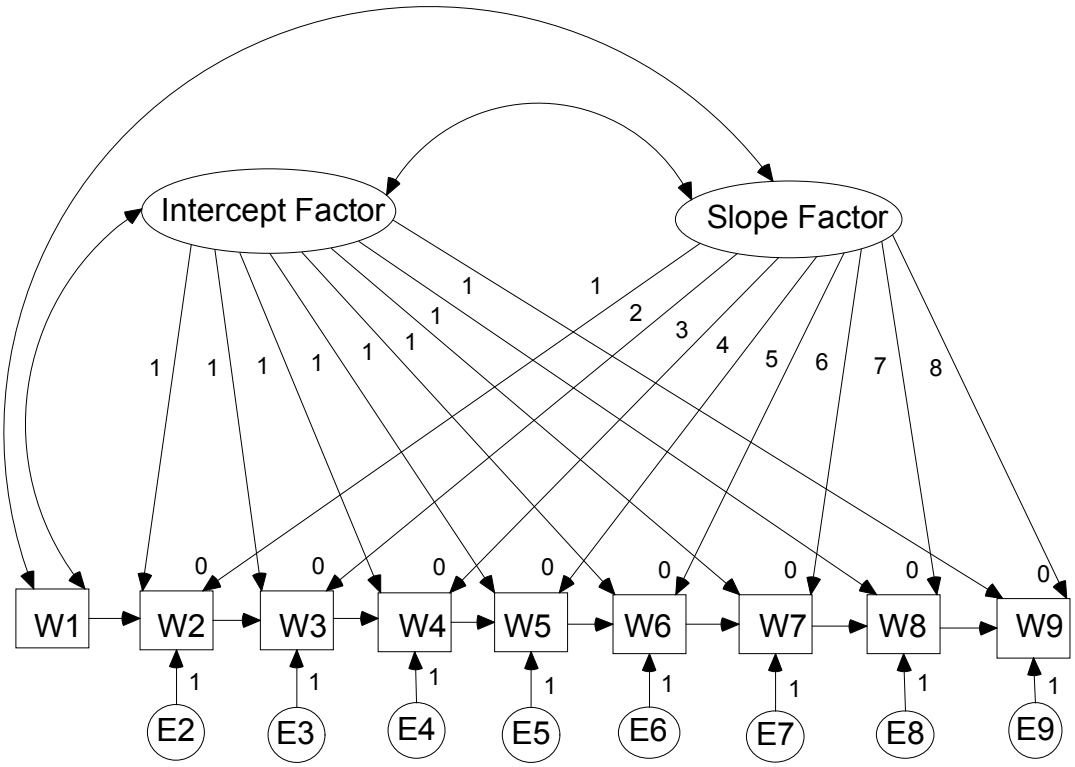


Figure 6.

Conditional ALT Model with 6 Predictor Variables

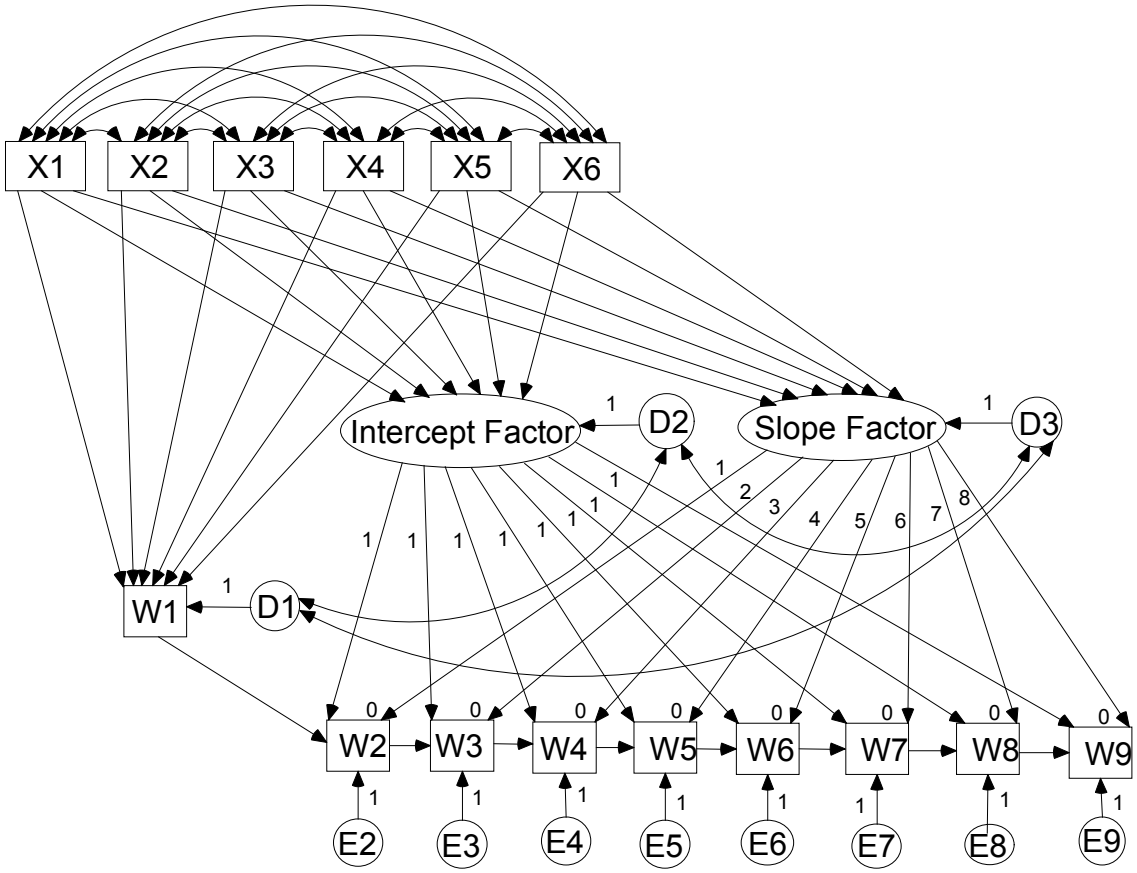
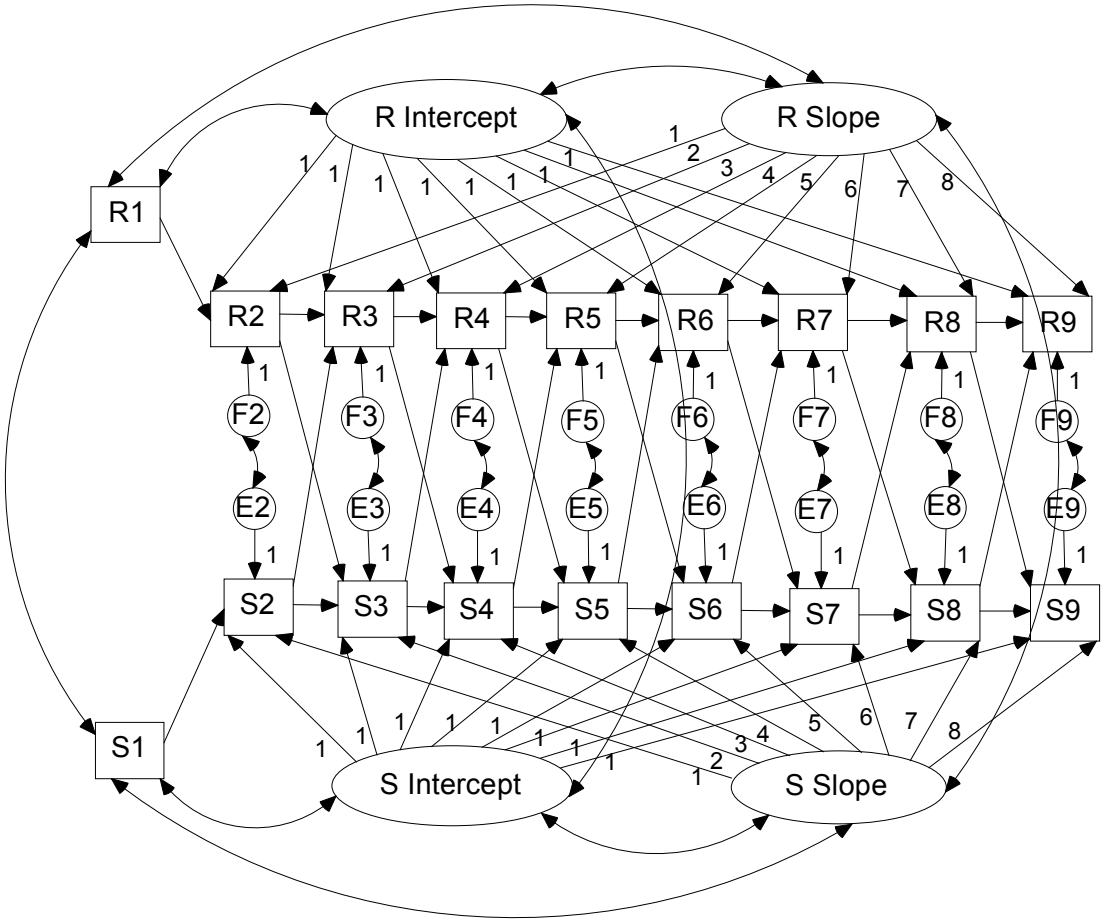


Figure 7.

Bivariate Cross-Lagged ALT Model



Note. Intercepts of R1 through R8 and S1 through S8 fixed to zero.
Paths ρRt,St-1 set equal (e.g., R2→S3 = R3→S4).
Paths ρSt,Rt-1 set equal (e.g., S2→R3 = S3→R4).