Perfectionism and The Relationship Between Personality and Eating Attitudes: Testing a Mediation Model

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Abstract

Perfectionism is characterised as setting excessively high standards of performance and behaviour without allowing oneself to be, or present, as any less than perfect. In the last 30 years, the literature on perfectionism has increased through its relationship with several important outcomes such as adverse eating attitudes and eating disorders. Perfectionism has also been associated with personality traits, particularly conscientiousness and neuroticism. Adaptive perfectionism has been linked with elevated conscientiousness and both favourable and adverse eating attitudes. Conversely, maladaptive perfectionism has been associated with increased neuroticism and adverse eating attitudes. Greater endorsement of conscientiousness has been associated with both favourable and adverse eating attitudes. Neuroticism has also been associated with adverse eating attitudes. Whilst the individual relationships between perfectionism, personality and eating attitudes are evidenced in the literature, the interaction between all three remains unknown. The present study utilised an online survey to measure perfectionism (adaptive and maladaptive), personality traits (conscientiousness and neuroticism), and eating attitudes in 170 participants. Adaptive and maladaptive perfectionism had positive associations with eating attitudes. Similarly, adaptive and maladaptive perfectionism were positively associated with conscientiousness and neuroticism. Conscientiousness and neuroticism also shared positive associations with eating attitudes. Using a simple mediation model, the relationship between conscientiousness and eating attitudes was mediated by adaptive perfectionism. A second simple mediation model examining the relationship between neuroticism and eating attitudes was partially mediated by maladaptive perfectionism. This supports the idea that perfectionism and personality should remain distinct constructs and highlights the significance of perfectionism in adverse eating attitudes.

Keywords: Perfectionism, Personality, Eating Attitudes

Declaration

This thesis contains no material which has been accepted for the award of any other degree of diploma in any University, and, to the best of my knowledge, this thesis contains no material previously published except where due reference is made. I give permission for the digital version of this thesis to be made available on the web, via the University of Adelaide's digital thesis repository, the Library Search and through web search engines, unless permission has been granted by the School to restrict access for a period of time.

Contribution Statement

In writing this thesis, my supervisors and I collaborated to generate research questions of interest and design the appropriate methodology. I conducted the literature search, ethics application, survey creation, study registration and uploaded the survey onto the Qualtrics website. My supervisors advised in the analyses of data and some analyses were performed collaboratively. I created all figures and tables and wrote this thesis independently.

Perfectionism and The Relationship Between Personality and Eating Attitudes: Testing a Mediation Model

The relationship between perfectionism and personality, and perfectionism and eating attitudes and disorders, has been documented consistently (Rutter-Eley et al.; Smith et al., 2021). At its core, perfectionism demands faultlessness of oneself and others (Smith et al., 2021). Perfectionism can be adaptive or maladaptive in nature, with research suggesting adaptive aspects of perfectionism are presented in disordered eating populations, but only if maladaptive perfectionism is also elevated (Bardone-Cone et al., 2007; Haynos et al., 2016). Personality is influential across various domains that concern our everyday functioning and relationships (Smith et al., 2021). The personality traits conscientiousness and neuroticism have been linked with adaptive perfectionism and maladaptive perfectionism respectively. Further, conscientiousness and neuroticism have been historically linked to outcomes in eating attitudes and continue to be an area of research interest (Dufresne et al., 2020; Heaven et al., 2001).

Whilst existing literature evidences the individual interplay between perfectionism, personality and eating attitudes, it is unclear how these three variables interact with each other. This has important implications for treatment in adverse eating attitudes and eating disorders. Through further understanding, at-risk populations and variability in symptomatology can be recognised, with treatment tailored according to specified traits or perfectionism presentation (Dufresne et al., 2020).

1.1 Perfectionism

Over the past 30 years, the literature on perfectionism has expanded through its relationship with various important outcomes such as eating disorders, depression, anxiety, and procrastination. (Smith et al., 2021). Frost et al. (1990) defined perfectionism as setting "high standards of performance which are accompanied by tendencies for overly critical

evaluations of one's own behaviour" (p.450). Incorporating overly critical self-evaluations into the definition of perfectionism allows for a differentiation between perfectionistic individuals and those who are exceedingly skilled and successful individuals (Frost et al., 1990; Smith et al., 2021). Perfectionism involves an overpowering urge to be or present as perfect, without allowing oneself to be any less than (Frost et al., 1990; Smith et al., 2021). Setting high standards and striving to attain them is not unreasonable (Frost et al., 1990). Indeed, Hamachek (1978) described "normal perfectionists" as able to accept mistakes in an overall success, whereas "neurotic perfectionists" do not allow for mistakes and feel they have never performed well enough (Frost et al., 1990).

There are numerous measures of perfectionism, with the measures by Frost et al. (1990) and Hewitt and Flett (1991) forming the basis of perfectionism research today. Both researchers independently proposed multidimensional conceptualisations of perfectionism, both termed the Multidimensional Perfectionism Scale (Frost et al., 1990; Hewitt and Flett, 1991). In their scale, Hewitt and Flett (1991) suggested three dimensions are prominent in perfectionistic behaviour. The first, Self-oriented Perfectionism, involves striving for perfectionism of oneself and adapting behaviour to avoid failure (Smith et al., 2021). Contrastingly, Other-oriented Perfectionism involves the hypercritical evaluation of others, enforcing one's need for perfection in others (Hewitt & Flett, 1991). Lastly, Socially Prescribed Perfectionism involves perfectionism of oneself because of the belief that others demand perfectionism of them, rather than one's own perfectionistic needs (Hewitt & Flett, 1991).

Frost et al. (1990) proposed six dimensions of perfectionism: Concern Over Mistakes, Doubts About Actions, Parental Expectations, Parental Criticism, Personal Standards and Organisation. Along with excessive concern over mistakes and doubting of actions and work, Frost et al.'s scale considers the tendency of perfectionists to attribute importance to parental

expectations and evaluations of them (Frost et al., 1990). Hence, it has been theorised perfectionistic individuals are likely to have been raised in environments where love and approval were conditional on performance (Frost et al.,1990). Moreover, for perfectionistic individuals, there is an insistence on neatness and order that dictate everyday tasks (Frost et al., 1990).

Frost et al. (1993) considered both multidimensional perfectionism scales proposed by Frost et al. (1990) and Hewitt and Flett (1991) and conducted a factor analysis on the three and six dimensions proposed. Their results showed a two-factor solution of positive achievement strivings (Self-oriented Perfectionism, Other-oriented Perfectionism, Personal Standards and Organisation) and maladaptive evaluation concerns (Socially Prescribed Perfectionism, Concern Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism) were present (Frost et al., 1993). Hence, success stems from the ability to have effective organisational skills and having elevated expectations of oneself (Self-Oriented Perfectionism, Personal Standards) and others (Other-oriented perfectionism; Frost et al., 1993) and is regarded as adaptive perfectionism. Conversely, concerns over personal mistakes and failure (Concerns Over Mistakes, Doubts About Actions) and receiving criticism or evaluation from others (Socially Prescribed Perfectionism, Parental Expectations and Parental Criticism) reflect maladaptive perfectionism (Frost et al., 1993). However, as Smith et al. (2021) note, classifying Self-oriented Perfectionism as adaptive diminishes the general theoretical basis of Self-oriented Perfectionism as a vulnerability factor linked with adverse consequences. Bardone-Cone et al. (2007) and Haynos et al. (2016) also noted that Personal Standards and Organisation may be considered maladaptive when other perfectionism measures are present. Nonetheless, Frost et al. (1993) demonstrated the theoretical similarity behind both Frost et al.'s (1990) and Hewitt and Flett's (1991) multidimensional models of perfectionism. However, this current study is selective in its

interest of the extant literature, with a focus on Frost et al.'s (1990) multidimensional perfectionism measure.

1.2 Perfectionism and Personality

Perfectionism and personality have been consistently associated with one another, with some confusion of the two as the same construct. Personality can be described as a body of psychological characteristics, with personality "traits" used as "a unit of analysis" (Pervin & Cervone, 2010, p.9). Personality traits are reasonably stable across time and varying life domains, allowing one to think, feel, and act in a particular manner (Pervin & Cervone, 2010). Such traits are sometimes conceptualised as predispositions, in that they explain what an individual typically does or is predisposed to do (Pervin & Cervone, 2010). Factor analytic methods of personality arose in the twentieth century, with a five-factor structure, termed the "Big Five" arising. The Big Five comprises traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism (Kern, 2020). The personality traits conscientiousness and neuroticism most commonly circulate perfectionism literature (Smith et al., 2019; Smith et al., 2021; Walton et al., 2018). Conscientiousness pertains to an individual's inclination toward being diligent, self-controlled, persistent, orderly, and careful (Kern, 2020). Conscientiousness has been associated with positive outcomes across physical and mental health, occupational success, stable family and marriages, and longevity (Kern, 2020). Opposingly, neuroticism refers to individuals who are more susceptible to feeling negative emotions, including sadness, loneliness, anxiety, worry, fear, and guilt, and have an increased likelihood of emotional instability (Zhang, 2020). Individuals with increased neuroticism are subject to negative cognitions and display such negativity in explaining situations (Zhang, 2020). Moreover, these individuals have difficulties managing impulses, stress and delaying gratification (Zhang, 2020).

Perfectionism is often misconstrued as the trait conscientiousness, however, as Smith et al. (2021) suggested, the unreasonable expectations that epitomise perfectionism differ from the self-controlled, organised, and hardworking aspects of conscientiousness. Notably, perfectionistic individuals receive no reward or satisfaction from their performance and judge their mistakes as a representation of their self-worth (Hewitt & Flett, 2007). Conversely, highly conscientious individuals can acknowledge success, reward themselves and do not centralise on their mistakes (Hewitt & Flett, 2007). Importantly, conscientiousness and perfectionism should remain distinct as the unique features and predictive ability of perfectionism diminishes (Smith et al., 2021). Furthermore, combining the two is not evidenced in the literature as they present outcomes in contradictory directions (Smith et al., 2021). Additionally, in Smith et al.'s (2019) meta-analysis of the Big Five traits and perfectionism, the five traits explained 22% of Personal Standards, 46% of Concerns Over Mistakes and 72% of Doubts About Actions. Perhaps excluding Doubts About Actions, these findings highlight that multidimensional perfectionism should remain separate from these five personality traits (Smith et al., 2021). This misconception presumably stems from the link between conscientiousness and adaptive perfectionism. Indeed, as Walton et al. (2018) demonstrated, conscientiousness was positively correlated with adaptive aspects of perfectionism including Personal Standards and Organisation.

Walton et al. (2018) further showed that emotional instability (a key component of neuroticism), was associated with maladaptive dimensions of perfectionism including Concerns Over Mistakes, Doubts About Actions and Parental Criticism. These findings are consistent with Smith et al.'s (2019) meta-analysis, showing Personal Standards (adaptive perfectionism) is related to conscientiousness and maladaptive perfectionism (Concern Over Mistakes, Doubts About Actions) were related to neuroticism. Similarly, Stumpf and Parker (2000) showed adaptive perfectionism subscales Personal Standards and Organisation had

elevated, positive correlations with conscientiousness. Neuroticism also showed strong correlations with maladaptive perfectionism subscales including Concerns Over Mistakes and Doubts About Actions (Stumpf & Parker, 2000). These findings are consistent with Dunkely et al. (2006) and Ulu and Tezer (2010), showing adaptive perfectionism was positively related with conscientiousness and negatively related with neuroticism. Hence, the existing literature largely complements one another indicating adaptive perfectionism is tied with conscientiousness and maladaptive perfectionism with neuroticism.

1.3 Perfectionism and Eating Attitudes and Eating Disorders

Perfectionism has been recurrently linked with adverse eating outcomes. Eating attitudes are considered as one's thoughts, feelings, behaviours, and relationship with food (Alvarenga et al., 2012). A "healthy" relationship with food involves eating and exercising patterns that match physiological needs and minimise disease (Society for Adolescent Health and Medicine, 2020). This optimal relationship with food also encourages emotional neutrality towards food, body positivity, and acknowledges social aspects surrounding food (Society for Adolescent Health and Medicine, 2020). However, perfectionism has been linked with adverse eating attitudes and eating disorders, predominately anorexia nervosa and bulimia nervosa (Forbush et al., 2007). Disordered eating is usually explained through difficulties with emotional regulation strategies (Overton et al., 2005). When conceptualising the onset and persistence of eating disorders, cognitions and beliefs are pivotal in the relationship with food (Overton et al., 2005). Exploration of cognitions have centralised on self-schematic content, whereby weight holds value for individuals with eating disorders (Overton et al., 2005). Hence, the robust cognitions and behaviours that maintain perfectionism in individuals are considered to easily overlap with disordered eating, whereby personal value is held in bodily appearance. In their review, Bardone-Cone et al. (2007) found nine studies illustrating that perfectionism is eminent in current and recovered individuals with anorexia nervosa,

persisting after long-term weight recovery. Interestingly, Stice (2002) proposed that perfectionism may be a risk factor for bulimia nervosa symptoms and simply a maintenance factor for other eating pathologies. As Dahlenburg et al. (2019) noted in their meta-analysis, a medium effect size between perfectionism and eating disorder maintenance suggests that perfectionism plays a significant role in eating disorder symptomatology.

In their study, Haynos et al. (2018) reviewed perfectionism levels (low, high adaptive and maladaptive, moderate maladaptive, and high maladaptive) with eating disorder pathology. The high adaptive and maladaptive perfectionism group showed increased eating disorder symptoms, with emphasis on restrictive eating and body checking (Haynos et al., 2018). In contrast, the low perfectionism group had ideal functioning surrounding eating, with reduced body checking, restrictive eating, and purging (Haynos et al., 2018). Through a multidimensional perspective, Halmi et al. (2000) demonstrated that individuals with anorexia nervosa presented with elevated maladaptive perfectionistic dimensions including Concerns Over Mistakes, Doubts About Actions, Parental Expectations, and Parental Criticism in addition to the adaptive dimension, Personal Standards. Similarly, Bastiani et al. (1995) found all dimensions elevated in anorexia nervosa individuals except Parental Expectations. Further, in bulimia nervosa individuals, maladaptive perfectionism (Concern Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism) and adaptive perfectionism (Personal Standards) were elevated (Lilenfeld et al., 2000). As Frost et al. (1990) posited, Personal Standards alone would not result in adverse outcomes as maladaptive perfectionism dimensions do. Higher baseline maladaptive perfectionism, particularly Concern Over Mistakes, has also been shown to increase bulimic symptoms longitudinally and binge eating behaviour (Kehayes et al., 2019; Mackinnon et al., 2011; Sherry et al., 2016). Further, Wade and Tiggemann (2013) demonstrated higher levels of Organisation was significantly associated with a desire for thinness. Thus, it can be inferred

from the existing literature that maladaptive aspects of perfectionism are most predominately linked with adverse eating attitudes and disorders with adaptive perfectionism sometimes elevated as well.

1.4 Personality and Eating Attitudes and Disorders

The connection between personality and eating attitudes has long been an area of interest and continues to be to this day (Overton et al., 2005). However, the current study is selective in assessing both conscientiousness and neuroticism, as these traits have been considered more important than extraversion, openness, and agreeableness (Heaven et al., 2001). The characteristics of conscientiousness have been identified as both positive and negative in disordered eating (Dufresne et al., 2020; Levallius et al., 2020). In their study on internet-based treatment of bulimia, Levallius et al. (2020) suggested that individuals high on conscientiousness would respond better to online treatment. This hypothesis is appropriate given that Levallius et al. (2020) acknowledged the relationship between low conscientiousness and disordered eating largely observed in the literature. Accordingly, conscientiousness was shown to decrease bulimic symptoms and remission (Levallius et al., 2020). These findings align with the theoretical underpinnings of conscientiousness as individuals high on this trait are diligent and may adhere more to treatment processes (Levallius et al., 2020).

However, in their systematic review examining personality traits in adolescents with disordered eating, Dufresne et al. (2020) found conscientiousness-related traits were displayed further in disordered eating youth. Dufresne et al. (2020) also reported adolescents with anorexia nervosa had increased levels of conscientiousness-related traits and greater impulse control compared with bulimia nervosa, binge eating disorder, and eating disorder not otherwise specified. This finding supports the idea that extreme levels of conscientiousness can be negative, but as mentioned, should not be intertwined with

perfectionism (Kern, 2020). Collectively however, low levels of conscientiousness have been documented in disordered eating populations. Cassin and von Ranson (2005) reviewed a decade of personality and disordered eating research and found that eating disorder symptomatology is correlated with low levels of conscientiousness. Emotional eating (individuals who eat in response to negative emotions) and external eaters (individuals who eat in response to external cues like texture and olfactory cues, common in bulimics) were also found to be less conscientious (Heaven et al., 2001). Moreover, individuals with a lifetime history of eating disorders including anorexia nervosa, bulimia nervosa and eating disorder not otherwise specified have been shown to have low levels of conscientiousness (Ghaderi & Scott, 2000; Podar et al., 1999).

Neuroticism in elevated levels is also linked with disordered eating (Zhang, 2020). Foremost, neuroticism is a normal dimension of personality that should not be mistaken for neurosis (Zhang, 2020). With this, increased neuroticism levels do not explicitly sign the existence of psychopathology, although it is deemed the most prominent risk among other personality traits (Zhang, 2020). In their review, Cassin and von Ranson (2005) specified that studies using personality measures such as the Neuroticism, Extraversion, Openness Personality Inventory (Costa & McCrae, 1985) and the Eysenck Personality Questionnaire (Eysenck et al. 1985) found high levels of neuroticism are correlated with eating disorder symptomatology. It is also noted that anorexia nervosa and bulimia nervosa have been repeatedly characterised by neuroticism (Cassin & von Ranson, 2005). However, variation in neuroticism between differing eating disorders is unclear as most studies combined all disordered eating types and compared them with non-eating disordered populations (Cassin & von Ranson, 2005). Nonetheless, numerous studies evidence that adolescent individuals with disordered eating report high levels of neuroticism (Dufresne et al., 2020). In male university samples, neuroticism has also been positively correlated with bulimic

symptomatology and in female university samples, with eating disorder symptomatology (Cassin & von Ranson, 2005). In their study of emotional, external, and restrained eaters, Heaven et al. (2001) also propose that eating behaviours are significantly associated with neuroticism. Collectively, these studies provide evidence that low conscientiousness is predominantly intertwined with disordered eating, in addition to increased neuroticism.

1.5 Research Hypotheses and Aims

Considering the aforementioned literature, the following hypotheses are presented.

Hypothesis 1: Adaptive perfectionism will have a statistically significant and positive relationship with conscientiousness and a negative relationship with neuroticism.

Hypothesis 2: Maladaptive perfectionism will have a negative relationship with conscientiousness and a statistically significant and positive relationship with neuroticism.

Hypothesis 3: Adaptive perfectionism will have a small, positive correlation with eating attitudes, whereas maladaptive perfectionism will have a statistically significant and positive relationship with eating attitudes.

Hypothesis 4: Conscientiousness will have a small, positive, and statistically significant association with eating attitudes and neuroticism will have a large, statistically significant, and positive relationship with eating attitudes.

Hypothesis 5: Adaptive perfectionism will mediate the relationship between conscientiousness and eating attitudes.

Hypothesis 6: Maladaptive perfectionism will mediate the relationship between conscientiousness and eating attitudes.

Method

2.1 Participants

Participants were recruited through the University of Adelaide's School of Psychology Research Participation System (RPS) and snowball sampling. An estimated sample size was determined through statistical power analysis with IBM Statistical Package for Social Sciences (SPSS) version 27.0 for Windows. The effect size used was based on Stice's (2002) meta-analytic review of factors relevant to eating pathology, which included perfectionism as a risk factor. Hence, both of these variables are important in the present study. In Stice's (2002) study, a medium effect size was found between perfectionism and eating pathology maintenance. However, as Dahlenburg et al. (2019) cautioned, Stice (2002) used a non-clinical population, which is suitable in the current study but should be considered when applied in clinical populations. To detect a medium effect size (.30) with a power of .80, a sample size of 85 is recommended. The present study's sample size of 170 participants exceeded the minimum sample size recommendations required for adequate power to detect a medium effect size. For participants to be included in the study, it was required they were over 18 years of age, fluent in English, and resided in Australia.

Of the 194 participants responding to the study, six did not complete the survey in its entirety and were excluded from analyses. Data from a further six participants were excluded as the participants did not meet the inclusion criteria of being aged 18 years or older. Through examination of boxplots, a total of 12 outliers were identified within Personal Standards, Organisation, adaptive perfectionism, total perfectionism score, conscientiousness, Eating Attitudes Test-26 (EAT-26) score, Dieting, Bulimia and Food Preoccupation and Oral Control scales. Removal of outliers resulted in a significant change to subsequent correlation and mediation analyses and was therefore removed, with the final sample totalling $N = 170$. Participants were 85.9% female ($n = 146$), 12.4% male ($n = 21$), 1.2% non-binary ($n = 2$) and

.6% preferred not to answer (*n* = 1). The participants ranged in age from 18-42 years old, with a mean age of 19.65 years old (SD = 3.66) and a median of 18.00 years old. Regarding predominant countries of birth, 75.9% were born in Australia (*n* = 129), 2.9% were born in The Philippines (*n* = 5), 2.4% were born in China (*n* = 4), 2.4% born in India (*n* = 4), and 1.8% born in South Africa (*n* = 3). Various Asian Countries (7.4%) were reported alongside European countries (6%), North America (.6%) and the Middle East (.6%) as places of birth. Of the 170 participants, 88.8% (*n* = 151) completed secondary school, 4.1% (*n* = 7) obtained a diploma or post-schooling certificate, 3.5% (*n* = 6) have a bachelor's degree, 1.2% (*n* = 2) have a trade certificate, .6% (*n* = 1) have a post-graduate degree and 1.8% (*n* = 3) reported other.

2.2 Measures

Demographic information. Participants provided demographic information about their age, gender, English proficiency, country of residence, place of birth, and education level.

The Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). The FMPS measures six dimensions of perfectionism. The Concern Over Mistakes subscale measures negative responses to mistakes that are viewed as a failure and a loss of respect from others, e.g., "I should be upset if I make a mistake". The Doubts About Actions subscale measures the degree of doubt in achieving tasks, "Even when I do something very carefully, I often feel it is not quite right". The Parental Expectations subscale reflects the extent of perceived expectation from parents, "My parents wanted me to be the best at everything" and the degree of one's parents being excessively critical generated the Parental Criticism subscale, "I never felt like I could meet my parents' standards". The Personal Standards subscale measures high standards set by the individual, and the extreme emphasis on achieving such standards for self-worth, "I set higher goals than most people". The

Organisation subscale reflects personal management, “Organisation is very important to me”. Frost et al. (1990) reported Cronbach’s alpha was .88 for Concern Over Mistakes, .77 for Doubts About Actions, .84 for both Parental Expectations and Parental Criticism, .83 for Personal Standards and .93 for Organisation. In the current study, Cronbach’s alpha was .92 for Concerns Over Mistakes, .81 for Doubts About Actions, .87 for Parental Expectations, .89 for Parental Criticism, .82 for Personal Standards and .90 for Organisation, indicating all are within an acceptable range. The subscales can be divided into two domains: “positive achievement strivings” (adaptive, positive perfectionism) and “maladaptive evaluation concerns” (maladaptive, negative perfectionism). Adaptive perfectionism consists of the Personal Standards and Organisation subscales, whereas Concerns Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism reflect maladaptive perfectionism. Scores high on adaptive perfectionism and maladaptive perfectionism indicate one is reflective of that domain. In the current study, Personal Standards had the highest correlation with the FMPS (r = .86), followed by Organisation (r = .80), Concerns Over Mistakes (r = .31), Doubts About Actions (r = .13), and finally Parental Expectations (r = .03) and Parental Criticism (r = .03).

The FMPS is a 35-item measure and uses a five-point Likert-Scale (1 = Strongly Disagree, 5 = Strongly Agree). Scores range from 35 to 175, with higher scores indicative of higher perfectionism levels. Organisation is not included in total scores as it has weak correlations with other subscales (Frost et al., 1990). However, once the Organisation subscale is removed, the internal reliability of the overall perfectionism score (.90) is not affected as was observed in college student samples (Frost et al., 1990). Notably, Frost et al. (1990) suggested Organisation is a correlate of perfectionism and not a key characteristic and thus was removed from total perfectionism score and the adaptive perfectionism subscale in the present study. Various studies have also indicated good concurrent and discriminant

validity of the FMPS. This was demonstrated through significant, positive correlations with other measures of perfectionism (see Frost et al., 1990; Woodfin et al., 2020). Stoeber (1998) notably proposed four underlying subscales rather than six (where Concerns Over Mistakes and Doubts About Actions are combined, Parental Expectations and Parental Criticism are combined, and Personal Standards and Organisation remain distinct). Though, there are apprehensions that Concerns Over Mistakes and Doubts About Actions could be combined and are interrelated; as Concerns Over Mistakes measure thoughts, while Doubts About Actions measure behaviour (Stallman & Hurst, 2011). This study will follow the like of Pannhausen et al. (2020) in retaining the original six-factor solution proposed by Frost et al. (1990). This is further reasoned by the instability in results regarding the use of different subscales in outcomes (Stallman & Hurst, 2011).

Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism Index Condensed (OCEANIC; Schulze & Roberts, 2006). The OCEANIC is a short-form personality measure based on the Big Five factor model assessing traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism that consists of 45 items. Participants rate their responses using a six-point Likert Scale with responses ranging from "always" to "never", whereby high agreement indicates greater endorsement of the particular trait. For the present study, only items relating to conscientiousness and neuroticism were administered to participants. Example items from the conscientiousness subscale consist of three facets: organised, e.g., "I am organised", efficient and dependable, "I like to be consistent", and hardworking "When I get an assignment, I do my best". Example items from the neuroticism subscale consist of four facets and include: nervous and stressed out e.g., "I feel jittery and tense", irritable, "I am moody", worrying, "I worry more than most people", and envious and jealous, "I am an envious person". Internal consistency reliability is high, with Cronbach's alpha of .91 for both conscientiousness and neuroticism (Schulz & Roberts,

2006). In the current study, Cronbach's alpha is .89 for conscientiousness and .93 for neuroticism, indicating Cronbach's alpha is within an acceptable range. The OCEANIC has good predictive and construct validity, with the conscientiousness factor predicting university grades beyond intelligence measures (Schulz & Roberts, 2006).

The Eating Attitudes Test-26 (EAT-26*;* Garner et al., 1982). The EAT-26 measures the risk of an eating disorder based on beliefs and behaviours about eating. There are 26 items in the measure that form three subscales: Dieting, Bulimia and Food Preoccupation, and Oral Control. Items in the EAT-26 are arranged as personal statements that participants rate on a six-point Likert-Scale with possible responses including "always" through to "never". The Dieting subscale measures the avoidance of calorically dense foods and fixation on thinness, e.g., "am terrified about being overweight". The Bulimia and Food Preoccupation subscale measures thoughts about food and bulimia, e.g., "find myself preoccupied with food". The Oral Control subscale measures self-control of eating and apparent pressure from others to gain weight, e.g., "cut my food into small pieces".

The Dieting subscale has the highest positive correlation with total EAT-26 scores (r = .93) followed by the Bulimia and Food Preoccupation subscale (r = .64) and finally the Oral Control subscale (r = .60). In the current study, Dieting also had the highest positive correlation with total EAT-26 scores (r = .94) similarly followed by Bulimia and Food Preoccupation (r = .81) and the Oral Control subscale (r = .56). Responses to items suggestive of abnormal eating behaviours and attitudes have a score of three points, with less extreme responses worth two and one points. Scores range from 0 to 78, with a score of 20 or above indicating considerable concern with abnormal eating behaviours and attitudes. The EAT-26 has demonstrated good test-retest reliability (.84) and sensitivity of 88% and a specificity of 96% (Carter & Moss, 1984; Mann et al., 1983). The EAT-40 is highly correlated with the EAT-26 (.98), predicting group membership 86% of the time with a high

Cronbach's alpha of .94 (Garner & Garfinkel, 1979). In the current study, Cronbach's alpha for this measure was .90 indicating it is within an acceptable range. Further, Cronbach's alpha in the current study for the Dieting subscale was .89, for the Bulimia and Food Preoccupation subscale .79 and for the Oral Control subscale .66. The EAT-26 has also been useful in cross-cultural settings, provided it has been validated within the specific culture (Garfinkel & Newman, 2001).

2.3 Procedure

The Human Research Ethics Sub-Committee of the School of Psychology granted ethics approval for the present study (Approval No. 22/36). Participants were invited to participate through the University of Adelaide's RPS and snowball sampling. The study comprised an online survey administered through Qualtrics, which participants accessed through the RPS and via the direct URL for the study. The study remained available until the final date to participate, August 16, 2022. After reading information about the study, participants provided their informed consent (see Appendix A and B respectively). Participants completed demographic questions and each measure within the survey (FMPS, OCEANIC and EAT-26) which took approximately 30 minutes to complete (see Appendix C, D, E and F respectively). In return for their participation, first-year psychology students who completed the survey through the RPS were granted 0.5 course credit. No other incentives were presented in return for participation. Participation was voluntary, so individuals were able to withdraw at any time without any consequences. Upon completion, participants were thanked for their participation and directed to services in the event completion of the survey resulted in distress. Participants were offered the opportunity to request summary results of the study.

2.4 Data Analyses

Analyses were conducted using IBM SPSS version 27.0 for Windows. Correlational analyses were used to assess the relationships between perfectionism (adaptive and maladaptive), personality (conscientiousness and neuroticism) and eating attitudes. Mediation analyses were conducted using Model 4 of Hayes' (2013) PROCESS Macro for SPSS. As recommended by Hayes (2013), 10,000 bootstrapping resamples were used to generate 95% bias-corrected confidence intervals, with results regarded statistically significant when confidence intervals did not contain zero.

Results

3.1 Data Screening

Preliminary analyses were conducted on all variables used in the study to assess missing values and outliers. No missing data were identified and as noted earlier, the 12 outliers identified were removed from analyses. The assumptions of normality, linearity and homoscedasticity were examined in the data. The normality of variables was reviewed through visual inspection of histograms and Q-Q plots. Moderately, negatively distributed variables were found for total perfectionism score, adaptive perfectionism, conscientiousness, and neuroticism, whereas maladaptive perfectionism was moderately and positively distributed. The EAT-26 and subscales (Dieting, Bulimia and Food Preoccupation and Oral Control) were highly and positively skewed. Violations of normality weaken, rather than invalidate the analysis with this assumption rarely met due to measurement scales used (Hayes, 2013). This concerns the use of Likert scales, which are present in the current study (Hayes, 2013). As the EAT-26 is a measure of eating attitudes used as a screening tool for clinical diagnosis of eating disorders, it is expected to be positively skewed when applied in a non-clinical population (Papini et al., 2022). Further, bootstrapping procedures used do not require a sample to meet normality assumptions and thus no transformations were applied (Hayes, 2013). Lastly, an absence of multicollinearity indicated it was appropriate to conduct the mediation analyses.

3.2 Descriptive Statistics

Descriptive statistics and internal consistencies measured by Cronbach's alpha for all variables and scales in the present study are shown in Table 1. Total perfectionism score does not include scores from the Organisation subscale as per Frost's (1990) recommendation and as mentioned, is subsequently removed from the adaptive perfectionism subscale. Effects

across genders were not compared due to the uneven distribution of participants into differing gender categories.

Table 1

Descriptive Statistics for Perfectionism, Personality and Eating Attitudes Measures and Subscales

	N= 170				
Variables	Minimum	Maximum	Mean	SD	Cronbach's α
Total perfectionism score	29.00	65.00	49.60	7.60	.91
Conscientiousness	23.00	54.00	41.02	7.73	.89
Neuroticism	9.00	54.00	35.24	10.48	.93
EAT-26	.00	59.00	14.92	14.27	.90
Adaptive Perfectionism	14.00	35.00	25.85	4.95	.82
Maladaptive Perfectionism	31.00	108.00	67.01	16.16	.93
Organisation	10.00	30.00	23.75	4.24	.90
Concern Over Mistakes	11.00	45.00	28.22	8.15	.92
Doubts About Actions	6.00	20.00	14.02	3.54	.81
Parental Expectations	5.00	25.00	14.80	4.89	.87
Parental Criticism	4.00	20.00	9.97	4.28	.89
Dieting	.00	35.00	7.77	7.83	.88
Bulimia and Food Preoccupation	.00	14.00	2.45	3.42	.79
Oral Control	.00	15.00	3.16	3.37	.66

Note. Total Perfectionism Score = total scores on FMPS; *Adaptive Perfectionism* = Personal Standards total scores; *Maladaptive Perfectionism* = sum of Concerns over Mistakes, Doubts About Actions, Parental Criticism and Parental Expectation; *EAT-26* = Eating Attitudes Test-26 total scores.

3.3 Correlations and Hypothesis Testing

Correlations amongst the adaptive perfectionism, maladaptive perfectionism, conscientiousness, neuroticism, and EAT-26 measures were examined and are presented in Table 2. In support of hypothesis 1, that adaptive perfectionism would have a statistically significant and positive association with conscientiousness was supported. However, the positive association between adaptive perfectionism and neuroticism did not support the hypothesised negative relationship. The small, positive relationship between maladaptive perfectionism and conscientiousness does not support the negative relationship as stated in hypothesis 2 and was not statistically significant. However, the large, statistically significant and positive correlation found between maladaptive perfectionism and neuroticism was in support of hypothesis 2. Supporting hypothesis 3, a small positive correlation was found between adaptive perfectionism and eating attitudes and was statistically significant. A moderate, positive, and statistically significant correlation between maladaptive perfectionism and eating attitudes further supported hypothesis 3. Additionally, the association between conscientiousness and eating attitudes was positive and statistically significant as was the moderate, positive, and statistically significant correlation between neuroticism and eating attitudes, supporting hypothesis 4.

Table 2

Correlations between Perfectionism, Personality and Eating Attitudes Measures

	1.	2.	3.	4.	5.
1. Adaptive Perfectionism					
2. Maladaptive Perfectionism	.37**				
3. Conscientiousness	.63**	.13			
4. Neuroticism	.15	.56**	.07		
5. EAT-26	.23*	.41**	.17*	.44*	

Note. ***p*<.01, **p*<.05; *Adaptive Perfectionism* = Personal Standards; *Maladaptive Perfectionism* = sum of Concerns Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism; *EAT-26* = Eating Attitudes Test-26 total scores.

It was recommended the Organisation is excluded from total perfectionism score as it does not correlate highly with other subscales (Frost et al., 1990) and was similarly observed in the present study (see Table 3).

Table 3

Correlations Between Subscales of FMPS

	1.	2.	3.	4.	5.	6.
1. Personal Standards						
2. Organisation	.37**					
3. Concerns Over Mistakes	.49**	-.02				
4. Doubts About Actions	.27**	-.07	.62**			
5. Parental Expectations	.10	-.06	.31**	.22*		
6. Parental Criticism	.12	-.09	.40**	.34**	.82**	

Note. ***p*<.01, **p*<.05

3.4 Mediation Analyses

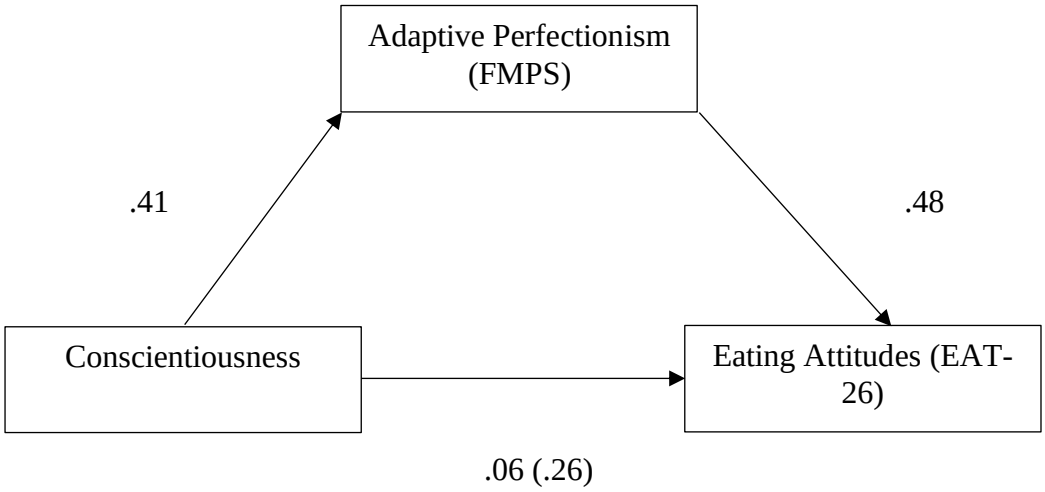
A simple mediation involves a predictor and dependent variable, with a single mediating variable (Hayes, 2013). The pathway between the predictor and dependent variable is the direct effect. The pathway between the predictor and dependent variable through the mediating variable is the indirect effect (Hayes, 2013). The total effect considers the direct and indirect effect that may have an impact on the outcome variable (Hayes, 2013). Two separate simple mediation models were implemented. The first used conscientiousness as the predictor, eating attitudes as the dependent variable, and adaptive perfectionism as the mediator. The second simple mediation model used neuroticism as the predictor variable, eating attitudes as the dependent variable and maladaptive perfectionism as the mediator. Both mediations used bias-corrected and accelerated confidence intervals and 10,000 samples. Bootstrapping, a non-parametric method is used in mediation analyses to generate a representation of the sampling distribution of the indirect effect through resampling techniques and the production of confidence intervals (Hayes, 2013). Bootstrapping minimises Type I error rate, better reflects the integrity of irregular sampling distributions and when applied, can increase the power of a result (Hayes, 2013).

As seen in Figure 1, between conscientiousness and adaptive perfectionism is path *a*, which was positive and statistically significant ($b(SE) = .41(.04)$, $p < .001$). Path *b*, between adaptive perfectionism and eating attitudes, was also positive and statistically significant ($b(SE) = .48(.24)$, $p = .04$). However, the direct effect, *c'*, between conscientiousness and eating attitudes without consideration of adaptive perfectionism, was positive and not statistically significant ($b(SE) = .06\ (.15)$, $p = .68$). The direct effect decreased from the total effect (.26), (the sum of *c'* and *ab*). The bias-corrected 95% CI for the indirect effect, path *ab* (.20) was significant, as bootstrapped confidence intervals did not contain zero [.02, .39].

This confirms a mediational model with adaptive perfectionism indirectly affecting the relationship between conscientiousness and eating attitudes, supporting hypothesis 5.

Figure 1

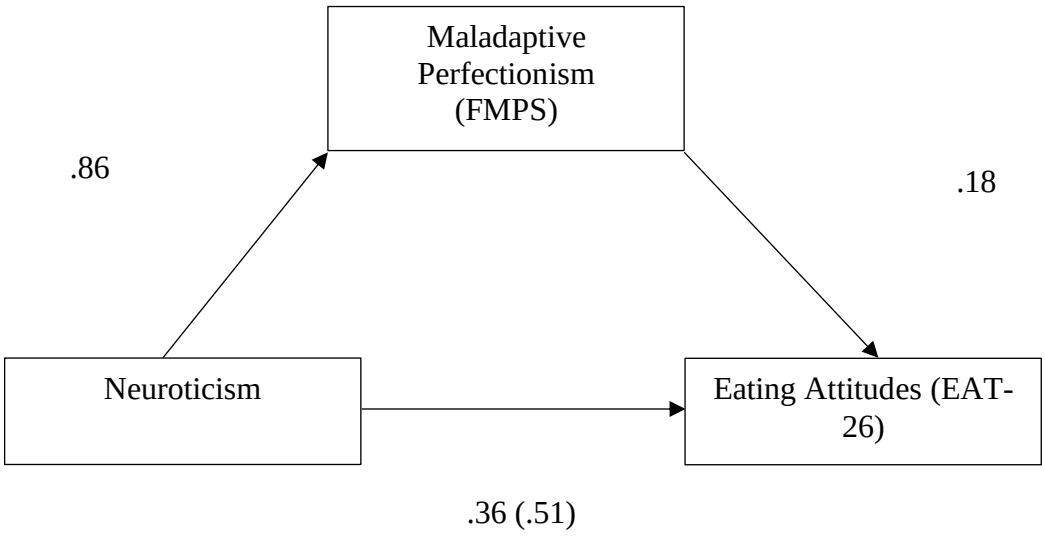
Simple Mediation Model Between Adaptive Perfectionism, Conscientiousness and Eating Attitudes



The second simple mediation model is shown in Figure 2. Path *a*, between neuroticism and maladaptive perfectionism, was positive and statistically significant (*b*(*SE*) = .86(.10), *p*< .001). Between maladaptive perfectionism and eating attitudes, path *b*, was also positive and statistically significant (*b*(*SE*) = .18(.06), *p*<. 001). Further, path *c'*, between neuroticism and eating attitudes was also positive and statistically significant (*b*(*SE*) = .36 (.09) *p*=< .001), which decreased from the total effect (.51). The bias-corrected 95% CI for the indirect effect, path *ab* (.15) was significant, as bootstrapped confidence intervals did not contain zero [.05, .27]. This confirms a mediational model with maladaptive perfectionism indirectly affecting the relationship between neuroticism and eating attitudes, supporting hypothesis 6. However, the mediation observed is considered partial.

Figure 2

Simple Mediation Model Between Maladaptive Perfectionism, Neuroticism and Eating Attitudes



Simple mediation analyses were repeated using each of the FMPS subscales except Personal Standards as this solely comprised the adaptive perfectionism measure. The remaining adaptive perfectionism subscale, Organisation, was used as a mediator between conscientiousness and eating attitudes. Maladaptive perfectionism (Concerns Over Mistakes, Doubts About Actions, Parental Expectations, and Parental Criticism) subscales were used as a mediator between neuroticism and eating attitudes. For paths *a* and *b*, direct effects, total effects, and significance levels for the subscales see Appendix G. Parental Expectations and Parental Criticism were the only subscales which did not have a significant indirect effect.

Discussion

It was hypothesised that adaptive perfectionism would have a statistically significant, positive association with conscientiousness and a negative association with neuroticism. Conversely, maladaptive perfectionism was hypothesised to have a negative association with conscientiousness and a statistically significant, positive association with neuroticism. It was also hypothesised that adaptive perfectionism would have a positive association with eating attitudes whereas maladaptive perfectionism would have a positive and statistically significant association with eating attitudes. Further, it was hypothesised that conscientiousness would have a small, positive, and statistically significant relationship with eating attitudes and neuroticism would have a large, statistically significant, and positive relationship with eating attitudes. The overarching aim was to determine whether perfectionism mediates the relationship between personality and eating attitudes. Specifically, whether adaptive perfectionism mediates the relationship between conscientiousness and eating attitudes and whether maladaptive perfectionism mediates the relationship between neuroticism and eating attitudes.

4.1 Perfectionism and Personality

As hypothesised, adaptive perfectionism had a statistically significant and positive relationship with conscientiousness. This relationship has been well documented in the literature (Dunkley et al., 2006; Smith et al., 2019; Stumpf & Parker, 2000; Walton et al., 2018). Indeed, the relationship between the two constructs is often integrated, with the hardworking and persistent qualities that epitomise conscientious individuals shared and likened with the high standards and drive set by adaptive perfectionists. However, as Smith et al. (2021) advocate, the outcomes of adaptive perfectionism and highly conscientious individuals differ. Highly conscientious individuals can acknowledge their successes and reward themselves, whereas perfectionistic individuals fail to do so (Hewitt & Flett, 2007).

As Smith et al. (2021) advocate, these constructs should remain distinct. This is because the predictive ability of each would weaken, which is important as they result in differing outcomes (Smith et al., 2021). Nonetheless, the aforementioned shared qualities aid in explaining the positive relationship observed.

Interestingly, the hypothesised negative relationship between adaptive perfectionism and neuroticism was not supported as a positive relationship was observed instead. Despite a small correlation found between adaptive perfectionism and neuroticism, this differs from the findings of Dunkely et al. (2006). In their study, Dunkley et al. (2006) found their adaptive perfectionism measure was negatively associated with neuroticism (Dunkley et al., 2006). However, the adaptive perfectionism measure was based on three theoretical frameworks: self-criticism, autonomy, and Hewitt and Flett's (1991) perfectionism scale. As the FMPS was notably absent from what constituted their adaptive perfectionism measure, this may provide some reasoning for the difference observed. Though, it was anticipated the present study would mirror these findings as although these measures have important differences, they still "tap" into adaptive and maladaptive perfectionism (p.410). However, in their meta-analytic review, Smith et al. (2019) also found a small, positive relationship between Personal Standards and neuroticism. Despite this relationship being small, as Smith et al. (2019) contemplate, those endeavouring for perfection usually have qualities of neuroticism, but not to the same magnitude as individuals higher on maladaptive perfectionism would. This differentiation intertwines with Hamachek's (1978) concept of normal perfectionists who can accept faults and neurotic perfectionists who do not allow for and cannot accept such faults. This is plausible as it may be unwise to suppose "normal" and "neurotic" perfectionists would not share any relationship.

Maladaptive perfectionism shared a small, positive relationship with conscientiousness, opposing the hypothesised negative relationship. The literature has largely

reported that conscientiousness is associated with adaptive perfectionism rather than maladaptive perfectionism (Dunkley et al. 2006; Smith et al., 2019; Stumpf and Parker, 2000; Ulu & Tezer, 2010; Walton et al., 2018). As Smith et al. (2019) showed in their meta-analysis on perfectionism and the Big Five traits of personality, conscientiousness had negative associations with maladaptive measures of perfectionism. It was found that conscientiousness had a small, negative relationship with Concerns Over Mistakes, and a strong, negative relationship with Doubts About Actions (Smith et al., 2019). This also opposes Dunkley et al.'s (2006) findings of a negative relationship between the two. Whilst the relationship observed between maladaptive perfectionism and conscientiousness in the present study was small and not statistically significant, it directly contradicts prior research. However, in Walton et al.'s (2018) study, Doubts About Actions, Parental Expectations and Parental Criticism were all negatively associated with conscientiousness except for Concern Over Mistakes, which had a very small and positive relationship that was not statistically significant. Theoretically, conscientious individuals are careful in nature, and thus the small positive association found with Concern Over Mistakes may provide some insight into the positive relationship observed in the present study. Though, the present study did not aim to directly test the association between Concern Over Mistakes and conscientiousness, and therefore may not be applicable. Nonetheless, the small association observed indicates a weak relationship exists between these variables.

Conversely, as hypothesised, maladaptive perfectionism had a large positive and statistically significant association with neuroticism. This finding is unsurprising as the association between these two variables has been recurrently demonstrated in existing literature (Dunkley et al., 2006; Smith et al., 2019; Stumpf & Parker, 2000). Neuroticism is characterised by negative emotions, anxiety, worry, fear, and guilt (Zhang, 2020). Individuals high in neuroticism also do not respond well in the presence of stress (Zhang, 2020).

Unmistakably, what typifies neuroticism intertwines with maladaptive subscales of perfectionism which involve anxiety and uncertainty over performance (Concern Over Mistakes, Doubts About Actions) and negative emotions concerning parental expectations and judgement (Parental Expectations, Parental Criticism) (Smith et al., 2019). Hence, the positive association observed is consistent with existing literature.

4.2 Perfectionism and Eating Attitudes

The first hypothesis, regarding the relationships between adaptive perfectionism and eating attitudes and maladaptive perfectionism and eating attitudes were well supported. Indeed, both adaptive perfectionism and maladaptive perfectionism were positively correlated with eating attitudes. However, the association between adaptive perfectionism and eating attitudes was statistically significant which was not hypothesised. Whilst a substantial area of research focuses on maladaptive perfectionism and adverse eating attitudes, it is not unexpected that a statistically significant association was found for adaptive perfectionism. As Halmi et al. (2000) and Bastiani et al. (1995) found, the adaptive perfectionism subscale, Personal Standards, was found in individuals with anorexia nervosa. Increased Personal Standards have also been shown in individuals with bulimia nervosa (Lilenfeld et al., 2000). Albeit a small association between the two, it is curious this relationship is statistically significant given Frost (1990) contemplated that Personal Standards alone would not contribute to adverse outcomes. In saying this, Smith et al.'s (2021) meta-analysis indicates the role of Personal Standards in eating disorders is contradictory, with some research suggesting Personal Standards are elevated in or not at all related to individuals with eating disorders. Brosof et al. (2019) aimed to address this inconsistency and found that individuals with high Personal Standards are only more susceptible to developing eating disorders if they have increased intolerance of uncertainty. However, their finding supports the idea that individuals with high Personal Standards

(adaptive perfectionism) are more likely to experience adverse eating outcomes when they are also higher on a measure that can be regarded as maladaptive. Although the relationship observed is small, the present finding echoes wider research that queries whether and the extent to which adaptive and maladaptive perfectionism is truly "adaptive" or "maladaptive" (Stoeber, 2020).

A larger, statistically significant, and positive relationship between maladaptive perfectionism and eating attitudes complements previous findings and the idea that maladaptive perfectionism is largely observed in adverse outcomes. Certainly, this finding is consistent with Halmi et al. (2000) who found all maladaptive subscales (Concerns Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism) were elevated in individuals with anorexia nervosa and with Lilenfeld et al. (2000) who also found all maladaptive subscales elevated in individuals with bulimia nervosa.

4.3 Personality and Eating Attitudes

The final correlational hypothesis, that conscientiousness would have a small positive relationship with eating attitudes and neuroticism would have a statistically significant and positive relationship with eating attitudes was supported. Although small, the positive association shown between conscientiousness and eating attitudes was statistically significant and complements Dufresne et al.'s (2020) findings that conscientiousness was displayed in disordered eating youth. As conscientious individuals are self-controlled, this may mirror the persistence and maintenance of adverse eating attitudes. Conversely, Levallius et al. (2020) posit that highly conscientious individuals adhered to treatment processes due to their self-control and diligence. Hence, the characteristics of conscientiousness may play both a positive and/or negative role throughout the development, maintenance and recovery from adverse eating attitudes and disorders. The moderate, positive association found between eating attitudes and neuroticism is in line with earlier studies. Certainly, individuals with

eating disorders score higher on neuroticism than healthy control groups (Díasz-Marsá et al., 2000). Neuroticism has also shown positive correlations with eating disorder symptomatology in female-based university samples, which parallels with the present study's sample of predominately university students (Brooking & Wilson, 1994). Similarly, in adolescents with eating disorders, elevated neuroticism was displayed (Dufresne et al., 2020). It has been postulated that traits such as neuroticism which are related to negative affectivity, may be an expression of self-harm behaviours (Dufresne et al., 2020). Therefore, eating disorder symptoms may be a response to negative affect experiences (Dufresne et al., 2020). Additionally, Heaven et al. (2001) suggest, neuroticism plays an essential role in understanding eating behaviours. These findings also reflect those in Cassin and von Ranson's (2005) meta-analysis, whereby a multitude of studies recurrently linked neuroticism with eating disorder symptomatology. Hence, the moderate and statistically significant association observed shows strong support for the consistent relationship between neuroticism and adverse eating attitudes.

4.4 Perfectionism, Personality and Eating Attitudes

The first mediational hypothesis, that adaptive perfectionism would mediate the relationship between conscientiousness and eating attitudes was supported. The simple mediation model was implemented in line with recommendations from Hayes (2013) for a model with a single mediator, in this case, adaptive perfectionism. The indirect effect of conscientiousness on eating attitudes when accounting for adaptive perfectionism was statistically significant, as the bootstrapped confidence intervals did not contain zero, indicating there is an effect. Complete mediation was observed as the association between conscientiousness and eating attitudes was entirely accounted for by adaptive perfectionism (Hayes, 2013). This finding highlights the ongoing complexity of adaptive perfectionism as a truly "adaptive" dimension as its association with unfavourable outcomes such as adverse

eating attitudes was observed. Indeed, the research surrounding Personal Standards (adaptive perfectionism) is mixed, with Frost et al. (1990) noting this subscale differs from other perfectionism subscales through its associations with both positive and negative outcomes. The current study adds support for the negative function of adaptive perfectionism which is consistent with Shafran et al.'s (2006) study of Personal Standards and eating attitudes and behaviour. In their study, individuals high on Personal Standards presented with adverse eating attitudes as fewer calorically dense foods were consumed, the overall quantity of food was restricted, and greater regret was reported after eating than individuals low on Personal Standards (Shafran et al., 2006). The negative function of adaptive perfectionism in the present study also aligns with previous research illustrating its relationship with eating disorders (Bastiani et al., 1995; Halmi et al., 2000; Lilenfeld et al., 2000).

The second mediational hypothesis, that maladaptive perfectionism would mediate the relationship between neuroticism and eating attitudes was also supported. However, only a partial mediation was observed as the statistically significant effect between neuroticism and eating attitudes was only reduced partially when accounting for maladaptive perfectionism. Hence, the indirect effect of neuroticism and eating attitudes through maladaptive perfectionism was statistically significant, as the bootstrapped confidence intervals did not contain zero, suggesting there was an effect. Thus, the partial mediation observed provides further explanation of how neuroticism is related to eating attitudes. When considering previous literature, various studies have demonstrated the predictive utility of multidimensional perfectionism beyond the Big Five personality traits. To illustrate, Mackinnon et al. (2011) found Concern Over Mistakes (a subscale of maladaptive perfectionism) predicted binge eating beyond neuroticism. Other studies looking beyond eating attitudes showed multidimensional perfectionism predicted maladaptive coping when controlling for both conscientiousness and neuroticism (Dunkley et al., 2014). This

distinction between the predictive validity of perfectionism and personality strengthens the idea that the two should not be confused as the same construct.

When repeating this model with the individual subscales of the FMPS, it is observed most subscales are involved (see Appendix G). Organisation showed complete mediation between conscientiousness and eating attitudes. Concerns Over Mistakes and Doubts About Actions partially mediated the relationship between neuroticism and eating attitudes. However, Parental Expectations and Parental Criticism did not have a statistically significant indirect effect, indicating no mediation. As Damian et al. (2013) contemplate, Parental Expectations and Parental Criticism are precursors of perfectionism and thus may not have as strong of an effect as Concerns Over Mistakes and Doubts About Actions have in maladaptive perfectionism.

4.5 Practical Implications

The present study's findings are important when considering treatment of adverse eating attitudes. Recent research has demonstrated the usefulness of treatment that is tailored to perfectionistic cognitions and behaviours. As Egan (2014) comments, perfectionism can disturb the course of treatment due to the tightly held cognitions and standards. This is particularly important in the treatment of eating disorders as perfectionism can decrease engagement, responsiveness and prevent the development of a therapeutic alliance (Egan, 2014). Cognitive behavioural approaches have been proposed to aid professionals in their assessment and treatment of perfectionism (Shafran et al., 2002). This approach involves four key factors: delivering psychoeducation about perfectionism, expanding means of self-evaluation, challenging unhelpful beliefs, and confronting tightly held personal values and critical evaluation of oneself (Buhrman et al., 2020). In their systematic review and meta-analysis, Lloyd et al. (2015) reported a significant change of a medium effect size in eating disorder measures after employing the cognitive behavioural approach. Considering the

present study's findings, this is positive as it highlights perfectionism, which has been shown to increase and/or maintain adverse eating attitudes and disorders can be addressed (Buhrman et al., 2020; Lloyd et al., 2015; Stice, 2002). Certainly, attempting to alter personality in the treatment of eating disorders would be difficult given personality is generally considered fixed (Pervin & Cervone, 2010). This is because personality has only shown to change over the lifetime in response to other life circumstances such as marital status, employment status and income (Boyce et al., 2012). Nonetheless, the results highlight the role of perfectionism in eating attitudes and thus, if perfectionism can be treated, its influence on and maintenance of adverse eating attitudes and disorders may reduce.

4.6 Strengths and Limitations

It was considered a strength that the design of this study allows for a differentiation between adaptive and maladaptive perfectionism which are often theorised to co-exist with one another. Hence, the simple mediation model utilised granted sole focus of adaptive perfectionism on eating attitudes, without considering maladaptive perfectionism in the same model. It is also considered a strength of this study that it offers novel insight into the precise interaction of perfectionism, personality and eating attitudes, which to the best of personal knowledge, past literature has not linked together.

Although this study has seen promising findings, there are several limitations to be considered. Firstly, like any other regression analysis, mediation analysis does not imply causal relationships, unless it is based on experimental design. Due to this methodology, it cannot be determined if the relationships observed between adaptive and maladaptive perfectionism, conscientiousness, neuroticism and eating attitudes are bidirectional or causal. However, the main limitation concerns the nature of the sample. Firstly, the sample comprised mostly university students. Reflecting on existing literature, it is evident an abundance of research on eating attitudes and disorders is available with samples comprising

university-aged students (i.e., late teens, early 20s; Cassin & von Ranson, 2005). This is the case for the present study, whereby it was observed the mean age for participants was 19.65 years old. Whilst the present study adds to existing literature, it is important to consider older-aged samples to greater expand the current knowledge base and demonstrate whether perfectionism has similar mediating effects in differing age groups. Although the present study did not aim to compare the relationship between perfectionism, personality and eating attitudes across genders, it was observed that the sample comprised predominantly females. Notably, the current literature on eating disorders largely epitomises the female experience of eating disorders, with little research into males' experience, despite differing body ideals typically idealised by each (Nagata, 2021). Females often report a desire for an excessively thin body ideal, whereas males report a body ideal characterised by muscularity as both are depicted and particularly embraced in Western culture (Nagata, 2021). Evidently, the difference in body ideals would conjure different eating-related cognitions, feelings, and behaviours in pursuit of such body ideals. Research on understanding a male's experience is limited as muscularity-oriented disordered eating has only recently received attention (Nagata, 2021). Conversely, the eating and exercising behaviours that females typically engage in circulate eating disorder literature. Whilst the EAT-26 can be administered to both males and females, no items pertaining to a muscular physique are included, with items that relate to physical appearance capturing thin ideals (see Appendix F). Though as Papini et al. (2022) found in their study of the EAT-26's psychometric properties, no items performed differently based on gender. However, it is also emphasised that gender differences amongst eating disorder measurements should be continually analysed (Papini et al., 2022). This is in the view of males often being underdiagnosed in addition to many men being unable to recognise their own disordered eating patterns as eating disorders are often misinterpreted as a female's experience. Hence, the gender differences within the present study should be

carefully considered as most of the data captured females' experiences rather than males or non-binary individuals.

Another limitation involves using a university-based sample. It was observed the mean level of conscientiousness was 41.02 which was relatively high in this sample, considering the cut-off point of 54 and in comparison with scores on other measures. This was expected given the sample comprised mostly university students, who theoretically would be a more conscientious cohort to research given they must be somewhat careful and diligent in their work to pursue career objectives (McIlveen et al., 2013). Consequently, this may have affected the relationships observed with perfectionism and eating attitudes.

Another limitation surrounds the number of subscales that should be retained when using the FMPS. Frost et al. (1990) originally suggested six subscales, however other researchers have suggested employing three, four or five subscales (Stallman & Hurst, 2011; Stoeber, 1998). The number of subscales to retain would not have affected main mediational analyses as all items within Personal Standards, Concern Over Mistakes, Doubts About Actions, Parental Expectations and Parental Criticism, were combined into either adaptive or maladaptive perfectionism. However, the current study did retain the original factor structure when conducting mediation analyses on each FMPS subscale (see Appendix G). This was to ensure there were clear distinctions between subscales as some variability is observed in results when a different number of subscales are used (Stallman & Hurst, 2011). This should be considered when interpreting the additional analyses of individual FMPS subscales as combining them may have produced differing outcomes. Additionally, as recommended by Frost et al. (1990), the Organisation subscale was not included in the total perfectionism score due to weak correlations with other subscales (see Table 3). This scoring suggestion has also been recommended by Mitchell-parker et al. (2017) whereby the Organisation subscale was not appropriate in total FMPS scores. Further, the Organisation subscale was not

included in the adaptive perfectionism measure as it has been considered merely a correlate of perfectionism rather than a central characteristic (Frost et al., 1990). Hence, the data collated on the Organisation subscale was not used in the adaptive perfectionism measure. However, if Organisation scores were combined with Personal Standards, this may have influenced eating attitudes outcomes. Thus, the absence of Organisation within the adaptive perfectionism measure may have limited the full exploration of this subscale with personality and eating attitudes. Whilst this study offered insight into the role of adaptive and maladaptive perfectionism in personality and eating attitudes, the total perfectionism score (adaptive and maladaptive perfectionism combined) was not explored with personality and eating attitudes. Therefore, this study may not fully comprehend the role of perfectionism and the mediations observed.

4.7 Future research

Considering the aforementioned limitations, there are various avenues for future research. As previously commented on, future research could focus on using a more diverse age group and specifically recruit more male participants to determine if mediating effects still occur. In line with males' experience of eating disorders, further research should ensure eating disorder measurements are continually analysed. Despite the study design allowing for differentiation between adaptive perfectionism and maladaptive perfectionism, the present study did not analyse the effects of them combined. Hence, future research should look at combining adaptive and maladaptive perfectionism together and assessing whether mediating effects still occur. Further, the Organisation subscale should also be further explored. Moreover, future research could look at the mediating effects of perfectionism on personality and eating attitudes in a clinical population. Subsequently, more research on eating attitudes outcomes after engaging in treatment of perfectionism should be investigated.

4.8 Conclusion

Overall, the hypotheses put forth in the present study were mostly supported. Adaptive perfectionism also had a significant and positive relationship with conscientiousness. Failing to support hypotheses was the observed positive relationship between adaptive perfectionism and neuroticism. Similarly, the positive relationship between maladaptive perfectionism and conscientiousness opposed the hypothesised negative relationship. Though in support of hypotheses, a positive association was observed between maladaptive perfectionism and neuroticism. Adaptive and maladaptive perfectionism were both positively associated with eating attitudes as was the relationship between conscientiousness and eating attitudes and neuroticism and eating attitudes which also supported hypotheses. Using a simple mediation model, adaptive perfectionism mediated the relationship between conscientiousness and eating attitudes. Likewise, maladaptive perfectionism partially mediated the relationship between neuroticism and eating attitudes. Thus, both perfectionism dimensions provide further explanation for the relationship observed between personality traits conscientiousness and neuroticism and eating attitudes. This has implications for individuals with adverse eating attitudes and disorders as implementation of perfectionism-based interventions may minimise cognitions, beliefs, and behaviours that fuel both. Future research should look at using a more diverse sample and analyse the overall perfectionism score on personality and eating attitudes and consider using a clinical population. Nevertheless, the present paper provides further evidence that personality and perfectionism are distinct constructs. It also highlights the significance of perfectionism in adverse eating attitudes.

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Appendices

Appendix A

Participant Information Sheet

PROJECT TITLE: Perfectionism and The Relationship Between Personality and Eating Attitudes: Testing a Mediation Model
HUMAN RESEARCH ETHICS COMMITTEE APPROVAL NUMBER:
STUDENT'S DEGREE: Bachelor of Psychology (Advanced) (Honours)

Dear Participant,
You are invited to participate in the research project described below.

What is the project about?
This research project is exploring the relationships between perfectionism, personality, and eating attitudes. Whilst these three variables are well researched on their own, not much is understood about how these variables may or may not affect one another in the general population. The aim of this project is to assess the relationship between personality and eating attitudes and whether perfectionism mediates this relationship. This project aims to achieve a greater understanding of eating attitudes in the general population and how variables like personality and perfectionism intertwine to potentially influence such attitudes. It is hoped that this project's findings will inform clinicians and health professionals with guidance on tailoring information specific to the general public regarding eating attitudes and behaviours that may inhibit the progression of clinical diagnosis. For those with a clinical diagnosis of adverse eating behaviours, this project may aid in tailoring treatments to target the perfectionistic and personality trait-specific cognitions that may contribute to adverse outcomes surrounding eating. This project may also act as a foundation for future research in this area.

Why am I being invited to participate?
You are being invited to participate in this project as you meet the requirements of this project which include being over the age of 18 years, reside in Australia, and are fluent in English.

What am I being invited to do?
You are being invited to participate in an online survey via the online survey platform Qualtrics. This survey will involve a series of questions with options to choose your answer from. This survey can and should be completed in a quiet place of your choice with enough time to sincerely consider and reflect upon the questions. No follow-up requirements will be required for you after completion of the current survey.

How much time will my involvement in the project take?
Your involvement in this survey should take approximately 30 minutes to complete, though, this will vary amongst participants as the time taken to read and understand each question may differ. Participation in this survey will be reimbursed through course credit for undergraduate student participants. No follow-up requirements are necessary after completion of this survey.

Are there any risks associated with participating in this project?

There is no foreseeable risk in participating in this project, although, there is a low risk that questions regarding psychological experiences may result in emotional discomfort. If participation in this survey has resulted in discomfort for you, you are strongly encouraged to reach out to a trusted adult, the University of Adelaide counselling services, your local General Practitioner, or mental health services that are listed below:

Beyond Blue
- Phone: 1300 224 636 (Available 24/7)
- Webchat (Available 24/7): https://www.beyondblue.org.au/support-service/chat

Lifeline
- Phone: 13 11 14 (Available 24/7)

Butterfly foundation
- Phone: 1800 334 673 (National Helpline)
- Webchat (Available 8am-12am (AEST/AEDT), 7 days/week
- Email: support@butterfly.org.au

What are the potential benefits of the research project?
Through your participation in this survey, you may aid current understandings of the interrelationships between perfectionism, personality and eating attitudes. Through this greater understanding, treatment options for individuals experiencing adverse eating attitudes may be improved and may prevent the potential development of eating disorders through having resources tailored to the general public. For first-year undergraduate psychology students, you will receive 0.5 course credit in return for your participation in the study.

Can I withdraw from the project?
Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study during the completion of the survey and up until the survey's submission.

What will happen to my information?
No personal information that could lead to your identification will be collected nor stored through your participation in this study. When analysing the data, your response will be given a numeric value such as '1', '2', '3', etc so that your responses remain anonymous. Data collected from your completed response to this survey will be stored in a password-protected secure location that is only accessible to the student researcher of this study and their primary supervisor. Data collected from this study will be held for five years after the submission data of the thesis project (September 2022) as recommended by the Australian Code for Responsible Conduct of Research. The data used in this project will form the student researcher's thesis, to be submitted to the School of Psychology within the University of Adelaide. The data which forms the thesis may later be published in an academic, peer-reviewed journal, though your data will remain anonymous. Your data may also be used as a foundation for projects undertaken by other researchers however, they will not be able to identify you given a non-identifiable numeric value is assigned to your responses. If you wish to be contacted if your responses to these questions raise any concerns, you may provide your email address. You will only be contacted for this reason. If you would like to receive a summary of the project's findings, they can be provided to you upon request, and you will therefore need to provide an email address. Your information will only be used as described

in this participant information sheet and it will only be disclosed according to the consent provided, except as required by law.

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number). This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research 2007 (Updated 2018). If you have questions or problems associated with the practical aspects of your participation in the project or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator.

If you wish to speak with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat, School of Psychology, University of Adelaide.

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If I want to participate, what do I do?

If you wish to participate in the current study, please click next. This will redirect you to the survey. Once this has loaded, please have a careful and thorough read of the consent information. If you provide your consent to participate, please complete the survey truthfully.

Appendix B

Participant Consent Form

Please see the Participant Consent Form below to read and understand.

1. I have read the attached Information Sheet and agree to take part in the following research project: Perfectionism and The Relationship Between Personality and Eating Attitudes: Testing a Mediation Model
Ethics Approval Number: 22/36

2. I have had the project, so far as it affects me, and the potential risks and burdens fully explained to my satisfaction by the research worker. I have had the opportunity to ask any questions I may have about the project and my participation. My consent is given freely.

3. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.

4. Although I understand the purpose of the research project, it has also been explained that my involvement may not be of any benefit to me.

5. I agree to participate in the activities outlined in the participant information sheet.

6. I understand my participation is anonymous and voluntary and that I am free to withdraw my information from the project until submission of the survey. I understand if I decide not to take part, or withdraw from the project, there will be no impact on my studies at the University, now or in the future.

7. I have been informed that the information gained in the project may be published in a thesis and potentially published in an academic, peer-reviewed journal article.

8. I have been informed that in the published materials I will not be identified and any personal information that could identify me will not be divulged. I consent for the use of my [data, information or tissue] by the same or other researchers for any future research purposes. I understand personal information that may identify me (e.g. name, address, date of birth) will be removed or changed before it is either shared with other researchers or made accessible on a public data repository

9. I understand my information will only be disclosed according to the consent provided, except where disclosure is required by law.

10. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Appendix C

Consent and Demographic Questions

By continuing, you agree that you have read and understood the Participant Information Sheet and provide your consent to participate in the current study.

- ○ I agree, and will continue to participate
- ○ I disagree, I do not want to continue to participate

Do you plan to gain course credit by participating in this study?

- ○ Yes
- ○ No

If you plan to receive course credit, please provide your SONA/Research Participation System Identification Number below

_____

If you plan to receive course credit, please provide your University of Adelaide Student Identification Number below

_____

What gender do you identify with?

- ○ Male
- ○ Female
- ○ Non-binary
- ○ Prefer not to say

What is your age in whole years?

_____

Is English your first language/ Are you fluent in English?

- ○ Yes
- ○ No, I am not fluent and therefore will not continue to participate in this survey

What is your country of Residence?

_____

What country were you born in?

_____

Q6 What is your highest level of education that you have completed?

- ○ Secondary School
- ○ Diploma or post-schooling certificate
- ○ Trade Certificate
- ○ Bachelor's degree
- ○ Post-graduate Degree
- ○ Other

Appendix D

Frost Multidimensional Perfectionism Scale (FMPS) Items

Please answer the following questions in relation to how much they apply to you. Do not spend too much time on any one question.

	Please select which answer best applies to you				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My parents set very high standards for me.	○	○	○	○	○
Organisation is very important to me.	○	○	○	○	○
As a child, I was punished for doing things less than perfectly.	○	○	○	○	○
If I do not set the highest standards for myself, I am likely to end up a second-rate person.	○	○	○	○	○
My parents never tried to understand my mistakes.	○	○	○	○	○
It is important to me that I be thoroughly competent in what I do.	○	○	○	○	○
I am a neat person.	○	○	○	○	○
I try to be an organised person.	○	○	○	○	○
If I fail at work/school, I am a failure as a person.	○	○	○	○	○
I should be upset if I make a mistake.	○	○	○	○	○
My parents wanted me to be the best at everything.	○	○	○	○	○
I set higher goals than most people.	○	○	○	○	○
If someone does a task at work/school better than I	○	○	○	○	○

do, then I feel as if I failed the whole task.					
If I fail partly, it is as bad as being a complete failure.	○	○	○	○	○
Only outstanding performance is good enough in my family.	○	○	○	○	○
I am very good at focusing my efforts on attaining a goal.	○	○	○	○	○
Even when I do something very carefully, I often feel that it is not quite right.	○	○	○	○	○
I hate being less than the best at things.	○	○	○	○	○
I have extremely high goals.	○	○	○	○	○
My parents expect excellence from me.	○	○	○	○	○
People will probably think less of me if I make a mistake.	○	○	○	○	○
I never feel that I can meet my parents' expectations.	○	○	○	○	○
If I do not do as well as other people, it means I am an inferior being.	○	○	○	○	○
Other people seem to accept lower standards from themselves than I do.	○	○	○	○	○
If I do not do well all the time, people will not respect me.	○	○	○	○	○
My parents have always had higher expectations for my future than I have.	○	○	○	○	○
I try to be a neat person.	○	○	○	○	○
I usually have doubts about the simple everyday things that I do.	○	○	○	○	○

Neatness is very important to me.	○	○	○	○	○
I expect higher performance in my daily tasks than most people.	○	○	○	○	○
I am an organised person	○	○	○	○	○
I tend to get behind in my work because I repeat things over and over.	○	○	○	○	○
It takes me a long time to do something “right”.	○	○	○	○	○
The fewer mistakes I make, the more people will like me.	○	○	○	○	○
I never feel that I can meet my parents’ standards.	○	○	○	○	○

Appendix E

Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism Index Condensed (OCEANIC) Items

Please answer the following questions in relation to how much they apply to you.

	Please select which option best applies to you.					
	Always	Usually	Often	Sometimes	Rarely	Never
I am organised.	○	○	○	○	○	○
I am a perfectionist.	○	○	○	○	○	○
I like to keep all my belongings neat and orderly.	○	○	○	○	○	○
I like to be consistent.	○	○	○	○	○	○
Efficient describes me well.	○	○	○	○	○	○
I like to be precise.	○	○	○	○	○	○
I am thorough.	○	○	○	○	○	○
If I start something, I work until it is finished to my satisfaction.	○	○	○	○	○	○
When I get an assignment, I do my best.	○	○	○	○	○	○
When under great stress, I feel like I might break down.	○	○	○	○	○	○
I feel jittery and tense.	○	○	○	○	○	○
I am sad and depressed.	○	○	○	○	○	○
I am moody	○	○	○	○	○	○

I get upset easily.	○	○	○	○	○	○
I worry more than most people.	○	○	○	○	○	○
I consider myself a nervous person.	○	○	○	○	○	○
I get very upset when I am criticised.	○	○	○	○	○	○
I am an envious person.	○	○	○	○	○	○

Appendix F

Eating Attitudes Test-26 (EAT-26) Items

Please answer the following questions in relation to how much they apply to you.

	Please select with option best applies to you.					
	Always	Usually	Often	Sometimes	Rarely	Never
Am terrified about being overweight.	○	○	○	○	○	○
Avoid eating when I am hungry.	○	○	○	○	○	○
Find myself preoccupied with food.	○	○	○	○	○	○
Have gone on eating binges where I feel that I may not be able to stop.	○	○	○	○	○	○
Cut my food into small pieces.	○	○	○	○	○	○
Aware of the calorie content of foods that I eat.	○	○	○	○	○	○
Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	○	○	○	○	○	○
Feel that others would prefer if I ate more.	○	○	○	○	○	○
Vomit after I have eaten.	○	○	○	○	○	○
Feel extremely guilty after eating.	○	○	○	○	○	○
Am preoccupied with a desire to be thinner.	○	○	○	○	○	○
Think about burning up calories when I exercise.	○	○	○	○	○	○
Other people think that I am too thin.	○	○	○	○	○	○
Am preoccupied with the thought of having fat on my body.	○	○	○	○	○	○

Take longer than others to eat my meals.	○	○	○	○	○	○
Avoid foods with sugar in them.	○	○	○	○	○	○
Eat diet foods.	○	○	○	○	○	○
Feel that food controls my life.	○	○	○	○	○	○
Display self-control around food.	○	○	○	○	○	○
Feel that others pressure me to eat.	○	○	○	○	○	○
Give too much time and thought to food.	○	○	○	○	○	○
Feel uncomfortable after eating sweets.	○	○	○	○	○	○
Engage in dieting behaviour.	○	○	○	○	○	○
Like my stomach to be empty.	○	○	○	○	○	○
Have the impulse to vomit after meals.	○	○	○	○	○	○
Enjoy trying new rich foods.	○	○	○	○	○	○

Appendix G- Simple Mediation by Perfectionism Subscales

	b(SE)	*p*	BootLLCI	BootULCI
Adaptive Perfectionism				
Organisation				
Path a	.38 (.03)	<.001	-.51	-.03
Path b	-.64 (.29)	.03		
Direct effect	.50 (.16)	<.001		
Indirect effect	-.24			
Total effect	.26			
Maladaptive Perfectionism				
Concerns Over Mistakes				
Path a	.44(.05)	<.001	.05	.27
Path b	.34 (.12)	.005		
Direct effect	.36 (.09)	<.001		
Indirect effect	.15			
Total effect	.51			
Doubts About Actions				
Path a	.21 (.02)	<.001	.05	.30
Path b	.76 (.29)	.01		
Direct effect	.35 (.10)	<.001		
Indirect effect	.16			
Total effect	.51			
Parental Expectation				
Path a	.09 (.04)	.01	-.01	.07
Path b	.21 (.17)	.23		
Direct effect	.49(.08)	<.001		
Indirect effect	.02			
Total effect	.51			
Parental Criticism				
Path a	.12 (.03)	<.001	-.01	.11
Path b	.33 (.20)	.10		
Direct effect	.47 (.08)	<.001		
Indirect effect	.04			
Total effect	.51			

Note. Personal Standards is not listed as this subscale comprised adaptive perfectionism in the present study.