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Perfectionism, Psychological Wellbeing, and Maladaptive Eating Practices

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Perfectionism, psychological well-being and maladaptive eating practices

ABSTRACT: *The links between perfectionism and maladaptive eating practices are reasonably well established. However, little is understood about how or why these links occur. The aim of the current study was to investigate psychological wellbeing as a potential mediating variable in this relationship and to determine how gender differences impacted these variables. A sample of 67 males and 162 females completed the Frost Multidimensional Perfectionism Scale (FMPS), the Ryff Psychological Wellbeing Scales (PWB), and the Maladaptive Eating Practices Questionnaire (MEPQ-25) among several questionnaires completed for a recent body image and eating disorders research project. Results indicated that females aged below 30 were more likely than males aged below 30 to engage in maladaptive eating practices. No gender differences were found in relation to perfectionism or psychological wellbeing. Additionally, psychological wellbeing was found to partially mediate the relationship between perfectionism and maladaptive eating practices for both males and females. These findings highlight the importance of targeting psychological wellbeing in the prevention and intervention of eating pathology, particularly in individuals who display perfectionistic qualities.*

Keywords: *Maladaptive perfectionism, Adaptive perfectionism, Maladaptive eating practices, Psychological well-being*

Introduction

The media has always been a strong driving force in determining what society deems to be the 'perfect' physical form (Holmstrom, 2004). However, the media's portrayal of the ideal body is not always representative of a healthy and achievable physical form (Sparhawk, 2003). When individuals are unable to meet the body ideals defined by the media using conventional methods, they may resort to unhealthy eating practices (Juarascio et al., 2011). The terms maladaptive eating practices and disordered eating, which are often used interchangeably in the academic literature, represent any disturbance to healthy eating patterns (Ebenreuter & Hicks, 2012). Such practices may include skipping meals or restrictive eating, vomiting, taking laxatives or engaging in excessive exercising (Forbush, Heatherton, & Keel, 2007). Past research has found maladaptive eating practices to be strongly linked to the development of eating disorders (Ebenreuter & Hicks, 2012). Obesity has not been classified as an eating disorder though there are strong similarities in some of the precursors and some researchers even ask 'does obesity prevention cause eating disorders?' (Schwartz & Henderson, 2009); and others indicate what may be potential similar biological processes (Day, Ternouth, & Collier, 2009) and similar or shared risk factors (National Eating Disorders Collaboration, 2014). This current paper emphasises disordered eating practices.

Eating disorders are among some of the most serious mental illnesses, particularly for adolescent girls, with the road to recovery characterized by chronicity and relapse (Hudson, Hiripi, Pope, & Kessler, 2007; Stice, 2002). Past research has suggested that only 46% of Anorexia Nervosa patients fully recovered with 20% remaining chronically ill for an extended period (National Eating Disorders Collaboration, 2014). Additionally, the mortality rates of eating disorders are among the highest of all mental illnesses (Gonzalez, Kohn, & Clarke, 2007). Research has reported that the risk of premature death for females living with Anorexia Nervosa is between six and twelve times higher than the normal population (National Eating Disorders Collaboration, 2014). Consequently, early detection of unhealthy eating practices is extremely important in the prevention of eating disorders.

Research surrounding the impact of external pressures such as family, friends, and peer groups on the development of eating pathology is well established (Knauss, Paxton, & Alsaker, 2007; Leit, Pope, & Gray, 2001). Consequently, more recent research has explored how individual differences, such as personality characteristics, may influence the development of maladaptive eating practices. Perfectionism has been prominent in this new line of research with results suggesting that individuals who display increased levels of perfectionism are more likely to engage in maladaptive eating practices (Forbush, Heatherton, & Keel, 2007). However, due to the complex nature of eating pathology (Fairburn & Harrison, 2003), it is unlikely that a simple relationship will explain the incidence of eating disorders. Consequently, examination of mediating variables that may explain all or part of the relationship between perfectionism and maladaptive eating practices is important. Due to the importance of psychological wellbeing in relation to perfectionism and eating pathology, the current study sought to explore psychological wellbeing as a possible mediating variable in this relationship.

Maladaptive Eating Practices

The academic literature has reported that radical attempts to lose weight have now become the norm rather than the exception, indicating the alarming prevalence of maladaptive eating practices (Neurmark-Sztainer, 1995). A United States study found that 56% of 9th grade girls admitted to engaging in forms of disordered eating (Croll, Neurmark-Sztainer, Story, & Ireland, 2002). Similarly, an Australian study found 36% of schoolgirls aged between 14 and 16 had engaged in at least one extreme weight loss method in the past month (Grigg et al., 1996). Contrary to public opinion, such practices are not unique to female adolescents (Edman, Yates, Arugete, & Draeger, 2008). Lowry et al. (2002) found that 17% of males and 32% of females engaged in unhealthy eating practices such as vomiting or use of laxatives. Similarly, Hautala et al. (2008) suggested that 24% of females and 16% males in their student sample ($N = 1036$) admitted to experiencing eating pathology symptoms including intentional vomiting and loss of control over eating.

Prior research has given evidence for eating pathology in both male and female populations; however, findings have suggested that the prevalence of disordered eating is higher in female populations (eg Hautala et al., 2008; Lowry et al., 2002). It is proposed that females may be more prone to engaging in maladaptive eating practices due to the emphasis that society places on women to be thin (Dakanalis & Riva, 2013; Noll & Fredrickson, 1998). For males, the ideal body is tall and muscular (Grammas & Schwartz, 2009). As a consequence, there is not the same emphasis on weight loss for males as there is for females.

Perfectionism and Maladaptive Eating Practices

Past research has reported an association between perfectionism and eating pathology in both clinical and non-clinical populations (eg Bardone-Cone, Sturm, Lawson, Robinson, & Smith, 2010; Wade & Tiggerman, 2013). Perfectionism is characterized by a desire to meet almost impossible personal standards (Frost, Marten, Lahart, & Rosenblate, 1990). It is suggested that a person who sets high, almost unattainable, goals in their daily life is more susceptible to internalising unrealistic body ideals. When these stringent body ideals cannot be met using conventional methods,

individuals may engage in unhealthy eating practices. Prior research has distinguished between two types of perfectionism: maladaptive and adaptive perfectionism (Frost et al., 1990). As mentioned, a key component of perfectionism is setting high personal standards. Striving for excellence in its self is not considered pathological but rather characteristic of a successful and competent individual (Frost et al., 1990). In this way, perfectionism may be viewed as a positive and adaptive quality (Stuart, 2009). However, when individuals set extremely high personal goals and allow little leeway for error, perfectionism can be maladaptive (Frost et al., 1990).

The Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990) is one of two very commonly used measures of perfectionism; the other being the Multidimensional Perfectionism Scale produced by Hewitt and colleagues (MPS; Hewitt & Flett, 1989). The FMPS characterizes perfectionism into six subscales: concern over mistakes, doubts about actions, parental criticism, parental expectations, personal standards, and organization. The subscales of the FMPS can be summed to produce a total perfectionism score. However, prior studies have opted to sum the concern over mistakes and doubts about actions subscales to produce a score for maladaptive perfectionism whilst the personal standards subscale has been used as a measure of adaptive perfectionism (eg., Bulik et al. 2003; Wade & Tiggerman, 2013).

Bulik et al. (2003) used the FMPS to investigate the relationship between components of perfectionism and eating disorders in a large sample of female twins. Results indicated that maladaptive perfectionism, but not adaptive perfectionism, significantly predicted eating pathology. Similarly, Forbush et al. (2007) found perfectionism to be associated with a range of disordered eating behaviours in a large sample ($N = 2482$) of male and female undergraduate students. Results indicated that perfectionism in females was associated with a lifetime history of fasting, binge eating, self-induced vomiting, diuretic abuse, or laxative abuse. For undergraduate males, only fasting was associated with increased levels of perfectionism. A more recent longitudinal study conducted by Boone, Soenens, and Brate (2011) found maladaptive perfectionism to be a significant predictor of bulimic symptoms in a sample of adolescents ($N = 559$). A significant relationship between adaptive perfectionism and bulimic symptomology could not be found.

Perfectionism, Psychological Wellbeing, and Eating Pathology

As described, several studies have given evidence for an association between perfectionism and maladaptive eating practices; however, few studies have explored how this relationship occurs. Bardone-Cone et al. (2007) suggested that the eating disorder literature requires more complex models involving perfectionism and maladaptive eating practices. Since this time, several studies have explored the role of a third mediating variable, including self-compassion (Stuart, 2009), shape and weight overvaluation, conditional goal setting (Joyce, Watson, Egan, & Kane, 2012) and anxiety (Egan et al., 2013) to explain the relationship between perfectionism and disordered eating. These initial studies have provided promising findings; however, recommendations for additional research to be conducted in this area have been made (Egan et al., 2013). Psychological wellbeing has been associated with both perfectionism and eating pathology and was therefore proposed as a potential

mediating variable in the relationship between perfectionism and maladaptive eating practices. It is proposed that when individuals experience increased levels of psychological wellbeing they are less susceptible to the maladaptive aspects of perfectionism and in turn will be less likely to engage in maladaptive eating practices.

Despite being frequently used in the academic literature, the term psychological wellbeing lacks a precise and universal definition. In broad terms, psychological wellbeing reflects optimum psychological functioning (Ryan & Deci, 2001). It is suggested that there are several specific dimensions that lead to optimal psychological functioning. The Ryff Psychological Wellbeing Scales (PWS; Ryff, 1989) were developed to capture six interrelated dimensions of psychological functioning thought to best measure psychological wellbeing: autonomy, environmental mastery, personal growth, positive relation to others, purpose in life, and self-acceptance. The current study opted to use the PWS as it was thought that the dimensions measured by the PWS best captured psychological wellbeing.

Prior studies have found increased levels of psychological wellbeing to be associated with a decreased prevalence of eating pathology (eg., Quick, Larson, Eisenber, Hannan, & Neumark-Sztainer, 2012). Kitsantas, Gilligan, and Kamata (2003) found participants who met the criteria for eating disorders ($N = 24$) scored significantly lower on life satisfaction and positive affect scales when compared to healthy controls ($N = 32$). Additionally, participants who were at risk for developing an eating disorder as well as participants who had already been diagnosed with an eating disorder scored significantly higher on measures of negative affect when compared to the healthy controls. More recently, Tomba and colleagues found psychological wellbeing to be significantly lower in college students who had been diagnosed with an eating disorder (Anorexia Nervosa, Bulimia Nervosa, or Binge Eating Disorder) when compared to healthy controls (Tomba, Offidani, Tecuta, Schumann, & Ballardini, 2014).

Psychological wellbeing is not only associated with eating pathology but has also be related to perfectionism. Chan (2007) found an association between perfectionism, both adaptive and maladaptive, and subjective wellbeing in a sample of gifted school children ($N = 317$). Adaptive perfectionism was found to positively predict life satisfaction, whilst maladaptive perfectionism predicted lower life satisfaction. Additionally, adaptive perfectionism was associated with decreased levels of negative affect, whereas maladaptive perfectionism was associated with increased negative affect. Similar results have been found across different cultural groups. Butt (2010) investigated the effect of perfectionism on psychological wellbeing as measured by the Ryff Psychological Wellbeing Measure (PWB; Ryff, 1989) in a sample of Pakistan university students. The PWB measures psychological wellbeing using six subscales: self-acceptance, positive relations to others, autonomy, environmental mastery, purpose in life and personal growth. Results found aspects of adaptive perfectionism to be positively associated with psychological wellbeing whereas aspects of maladaptive perfectionism were associated with psychological distress.

Present Study

Prior research suggests that psychological wellbeing is related to both perfectionism and eating pathology. Consequently, it is suggested that psychological wellbeing may not only explain individual differences in relation to perfectionism and maladaptive eating practices but may also account for the association between these constructs. However, to date, no prior studies have looked at these variables simultaneously. Additionally, the current study sought to further explore gender and age differences in relation to maladaptive eating practices. The majority of prior research has chosen to explore eating pathology in young female populations. Consequently, the current study included a community-based sample of participants aged from 17 to 77. Gender differences were assessed on young adults (aged below 30) as well as in older adults (aged 30 and above).

H1. Females will be more likely than males to engage in maladaptive eating practices.

H2. Psychological wellbeing will mediate the relationship between perfectionism and maladaptive eating practices using the entire sample as well as for males and females separately.

Method

Participants and Measures

Participants included 67 males ($M = 31.15$, $SD = 12.88$) and 162 females ($M = 30.86$, $SD = 14.26$) aged between 17 and 77.

The Ryff Psychological Wellbeing Scales

The Ryff Psychological Wellbeing Scale (PWB; Ryff 1989) is a 54 item, self-report measure designed to assess psychological wellbeing in adults and adolescences. The PWB consists of six subscales: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The PWB requires participants to rate their responses on a 6 point Likert scale from 1 = *strongly disagree* to 6 = *strongly agree*. Each subscale is summed to yield a total psychological wellbeing score with higher scores associated with high levels of psychological wellbeing.

Internal consistency and test-retest assessments have demonstrated high level psychometric qualities (Cheng et al., 1995; Ryff, 1989).

The Frost Multidimensional Perfectionism Scale

The Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990) is a 35 item, self-report instrument designed to measure six dimensions of perfectionism: concern over mistakes, parental criticism, parental expectations, doubts about actions, personal standards, and organization. The FMPS requires participants to rate their responses on a five-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The FMPS produces scores for all six dimensions as well as a total perfectionism score. In accordance with prior research, the doubts about actions and concerns over mistakes subscales were summed to produce a total score for maladaptive perfectionism, whilst

adaptive perfectionism was assessed using the personal standards subscale (Boone et al., 2012; Tiggerman & Wade, 2013).

The psychometric qualities including convergent and divergent validities of the FMPS have been found to be high (e.g., Frost et al 1990).

The Maladaptive Eating Practices Questionnaire

The Maladaptive Eating Practices Questionnaire (MEPQ - 25; Ebenreuter & Hicks, 2012) is a 25 item self-report measure of maladaptive eating practices. The MEPQ-25 consists of 5 subscales: cognitive, emotional, behavioural, physical, and social. The MEPQ-25 requires participants to rate their responses on a 6-point Likert scale from 0 = *never* to 5 = *always*. The MEPQ-25 produces scores for all five dimensions as well as a total maladaptive eating practices score. The MEPQ-25 total score is obtained by summing the scores for each subscale, with higher scores indicating higher levels of maladaptive eating practices.

The MEPQ-25 was found to be internally consistent ($\alpha = .80$) in a sample of high-school and university students ($N = 238$). Test-retest reliability was established using the same sample ($r = .90$). This information was gained through email communications with the author, Justine Ebenreuter. Further evidence for internal consistency ($\alpha = .74$) was provided using the current sample ($N = 229$). The current sample was also used to establish convergent validity. A positive and significant correlation was found between the MEPQ-25 and the overweight preoccupation subscale of the MBSRQ-AS ($r = .542$). The overweight preoccupation subscale assesses fat anxiety, weight vigilance, dieting and eating restraint. The questionnaire appears to be operating validly in assessing eating practices.

Procedure

Prior to the commencement of the research, the University Ethics board (BUHREC) granted approval for the project, which allowed both online (Survey Monkey) and hard-copy completions of the questionnaires.

Results

Initial bivariate correlations were run between all four variables: maladaptive perfectionism, adaptive perfectionism, psychological wellbeing, and maladaptive eating practices (see Table 1).

Table 1

Summary of Bivariate Correlations, Means, and Standard Deviations for Adaptive Perfectionism, Maladaptive Perfectionism, Psychological Wellbeing, and Maladaptive Eating Practices

Construct	1	2	3	4	M	SD
1. Adaptive Perfectionism					3.37	.73
2. Maladaptive Perfectionism	.466**				4.83	1.27
3. Psychological Wellbeing	-.056	-.580**			243.26	30.37
4. Maladaptive Eating Practices	.201**	.441**	-.369**		62.25	12.76

Note. M = mean, SD = standard deviation

** $p < .001$

Simple Regression

Bivariate correlations found both adaptive and maladaptive perfectionism to be positively associated with maladaptive eating practices. To further investigate how aspects of perfectionism are related to maladaptive eating practices a simple regression was run. In combination, adaptive and maladaptive perfectionism accounted for 20% of the variance in maladaptive eating practices, $R^2 = .195$, $R^2_{\text{adjusted}} = .187$, $F(2, 226) = 27.307$, $p < .001$. Maladaptive perfectionism, but not adaptive perfectionism, significantly predicted maladaptive eating practices (see Table 2). As adaptive perfectionism does not hold a unique relationship with maladaptive eating practices, only maladaptive aspects perfectionism was included in further analyses.

Table 2

Unstandardised (B) and Standardised (β) Regression Coefficients, and Standard Error of B for each Predictor in a Regression Model Predicting Appearance Evaluation

	B	SE B	β
Adaptive Perfectionism	-.006	.067	-.006

Maladaptive Perfectionism	.444**	.067	.444
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Note. B = regression coefficients, β = standardized regression coefficients, SE B = standard error of B

** $p < .001$

Multivariate Analysis of Variance – Participants aged below 30

Levene's test was not significant for maladaptive perfectionism $F(1, 160) = .237, p = .627$ and psychological wellbeing $F(1, 160) = 2.231, p = .137$ indicating that the assumption of equal variances had been met for these variables. However, Levene's test was significant for maladaptive eating practices $F(1, 160) = 12.60, p < .001$ indicating that the assumption of equal variances was violated for this variable. To address this violation, maladaptive eating practices was read at a more stringent alpha level of .01.

The Wilks Lambda statistic was used for analyses. There was a significant main effect of gender on the combined dependent variables $F(3, 158) = 6.49, p < .001, \text{partial } \eta^2 = .110, \text{observed power} = .968$. There was a significant effect of gender on maladaptive eating practices $F(1, 160) = 17.765, p < .01, \text{partial } \eta^2 = .100, \text{observed power} = .987$. Females ($M = 62.65, SD = 1.02$) were significantly more likely to engage in maladaptive eating practices when compared to males ($M = 61.97, SD = .63$). No significant effect of gender was found for maladaptive perfectionism $F(1, 160) = .381, p = .538$ or psychological wellbeing $F(1, 160) = .070, p = .791$.

Multivariate Analysis of Variance – Participants aged 30 and above

Levene's test was not significant for maladaptive perfectionism $F(1, 65) = .2681, p = .106$ and psychological wellbeing $F(1, 65) = .546, p = .463$ indicating that the assumption of equal variances had been met for these variables. However, Levene's test was significant for maladaptive eating practices $F(1, 65) = 5.089, p < .05$ indicating that the assumption of equal variances was violated for this variable. To address this violation, maladaptive eating practices was read at a more stringent alpha level of .01.

The Wilks Lambda statistic was used for analyses. There was no significant main effect of gender on the combined dependent variables $F(3, 63) = 1.846, p = .148$ indicating that there was no significant gender differences of maladaptive eating practices in participants aged 30 and above.

Mediation

Baron and Kenny's (1986) four step approach to mediation has been the general approach in many prior studies. However, critics of this approach suggest that these steps do not actually test the indirect pathway (Hayes, 2009). Additionally, calculation of the four steps results in very low power (Zhao, Lynch, & Chen, 2009). As potential problems with this approach have been reported (MacKinnon, Fairchild, & Fritz, 2007), a product of coefficient approach to mediation was adopted for the current study (Preacher & Hayes, 2004). This procedure involves multiplying the coefficients for

paths *a* and paths *b* (Figure 1) to obtain the indirect pathway. This pathway is then compared to the direct pathway (*c'*). The direct pathway (*c'*) is calculated using the following equation, c (total effect) = c' (direct effect) + $a \times b$ (indirect effect). If c' is reduced to zero in relation to c then perfect mediation is said to exist. If the direct effect decreases, but not to 0, partial mediation exists

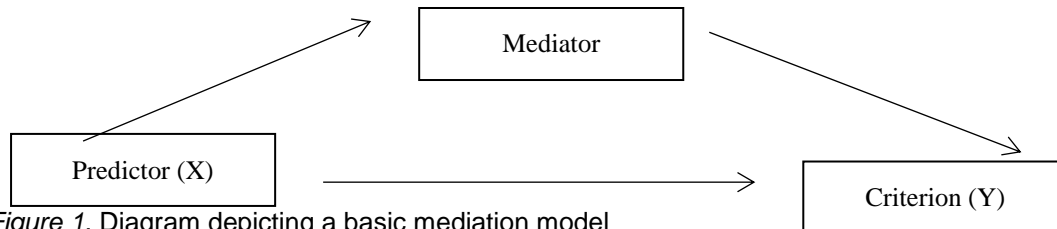


Figure 1. Diagram depicting a basic mediation model

Note. *a* = the unstandardized coefficient of the predictor when regressed against the mediator, *b* = the unstandardized coefficient of the mediator when regressed against the criterion, *c* = unstandardized coefficient of the predictor when regressed against the criterion (total effect).

To test the potential mediating effects of psychological wellbeing on the relationship between maladaptive perfectionism and maladaptive eating practices, the product of coefficient approach to mediation as described above was used. Maladaptive perfectionism was found to significantly predict psychological wellbeing, $R^2 = .336$, $R^2_{\text{adjusted}} = .333$, $F(1, 227) = 115.03$, $p < .001$. Secondly, psychological wellbeing was found to significantly predict maladaptive eating practices $R^2 = .136$, $R^2_{\text{adjusted}} = .133$, $F(1, 227) = 35.85$, $p < .001$. A third regression found maladaptive perfectionism to significantly predict maladaptive eating practices, $R^2 = .195$, $R^2_{\text{adjusted}} = .191$, $F(1, 227) = 54.85$, $p < .001$. The indirect pathway (*c*) was calculated by multiplying the regression coefficients (see Figure 2) for path *a* and *b* ($c = .214$). A subsequent Sobel test indicated that the mediation was statistically significant ($z = 2.21$, $p < .001$). The direct effect (*c'*) was reduced to .227, as such partial mediation was assumed.

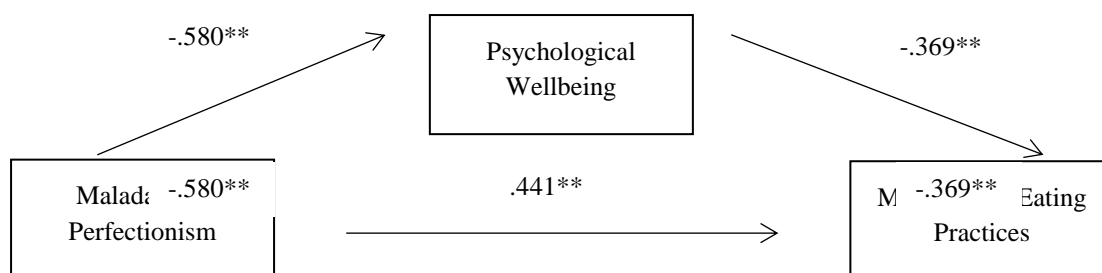


Figure 2. Wellbeing as a mediator between maladaptive perfectionism and maladaptive eating practices

Note. Values represent regression coefficients.

** = $p < .001$

To test the potential mediating effects of psychological wellbeing on the relationship between maladaptive perfectionism and maladaptive eating practices in females, the product of coefficient approach to mediation as described above was used. Maladaptive perfectionism was found to significantly predict psychological wellbeing, $R^2 = .335$, $R^2_{\text{adjusted}} = .331$, $F(1, 160) = 80.67$, $p < .001$. Secondly, psychological wellbeing was found to significantly predict maladaptive eating practices $R^2 = .138$, $R^2_{\text{adjusted}} = .133$, $F(1, 160) = 25.61$, $p < .001$. A third regression found maladaptive perfectionism to significantly predict maladaptive eating practices, $R^2 = .190$, $R^2_{\text{adjusted}} = .185$, $F(1, 160) = 37.58$, $p < .001$. The indirect pathway (c) was calculated by multiplying the regression coefficients (see Figure 2) for path a and b ($c = .222$). A subsequent Sobel test indicated that the mediation was statistically significant ($z = 4.40$, $p < .001$). The direct effect (c') was reduced to .230, as such partial mediation was assumed.

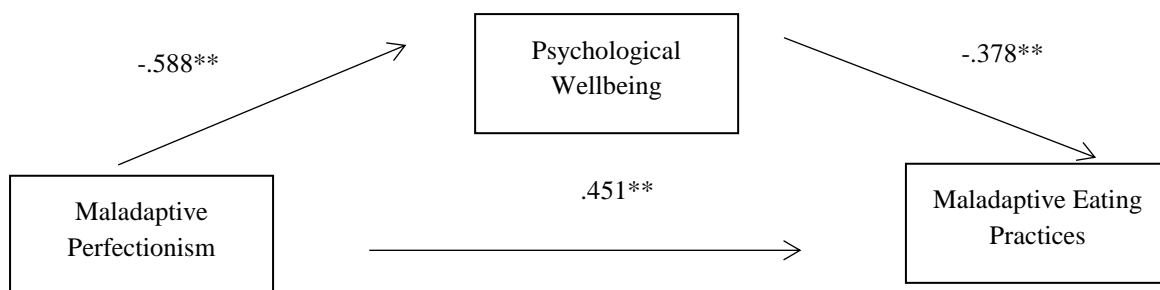
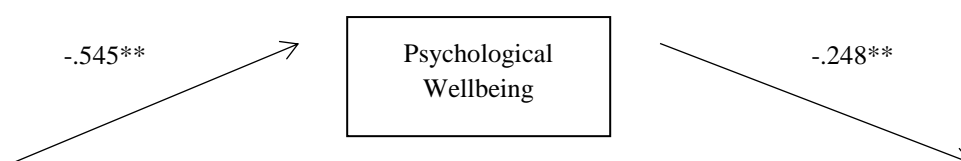


Figure 3. Wellbeing as a mediator being maladaptive perfectionism and maladaptive eating practices in females

Note. Values represent regression coefficients.

** = $p < .001$

To test the potential mediating effects of psychological wellbeing on the relationship between maladaptive perfectionism and maladaptive eating practices in females, the product of coefficient approach to mediation as described above was used. Maladaptive perfectionism was found to significantly predict psychological wellbeing, $R^2 = .326$, $R^2_{\text{adjusted}} = .315$, $F(1, 65) = 31.04$, $p < .001$. Secondly, psychological wellbeing was found to significantly predict maladaptive eating practices $R^2 = .110$, $R^2_{\text{adjusted}} = .097$, $F(1, 65) = 8.07$, $p < .001$. A third regression found maladaptive perfectionism to significantly predict maladaptive eating practices, $R^2 = .208$, $R^2_{\text{adjusted}} = .196$, $F(1, 65) = 17.09$, $p < .001$. The indirect pathway (c) was calculated by multiplying the regression coefficients (see Figure 2) for path a and b ($c = .135$). A subsequent Sobel test indicated that the mediation was statistically significant ($z = 2.54$, $p < .001$). The direct effect (c') was reduced to .190, as such partial mediation was assumed.



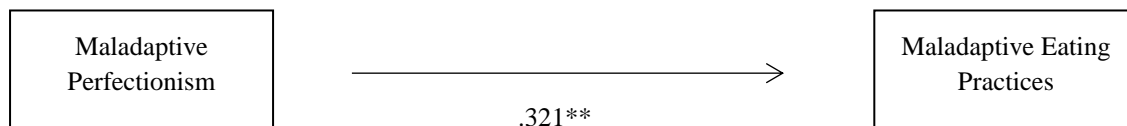


Figure 3. Wellbeing as a mediator being maladaptive perfectionism and maladaptive eating practices in males

Note. Values represent regression coefficients.

** = $p < .001$

Discussion

The results of the current study partially supported hypothesis one, finding that females were more likely than males to engage in maladaptive eating practices. Results indicated that younger female participants (aged below 30) were more likely than younger male participants to engage in maladaptive eating practices. This finding supported prior research that has found maladaptive eating practices to be more common in female populations (Lowry et al., 2002). These results further support suggestions that the perceived pressure to conform to body ideals may be greater for females when compared to males (e.g., Noll & Fredrickson, 1998). In contrary to this idea, **no gender differences could be found in relation to maladaptive eating practices for participants aged 30 and above.** Results indicated that older female participants were no more likely than older male participants to engage in maladaptive eating practices. It is proposed that younger females may be more susceptible to internalizing thin body ideals when compared to older females, leading to an increased prevalence of maladaptive eating practices within younger female populations. Consequently, gender differences in relation to eating pathology may decrease with age. However, it is recommended that future research investigate age and gender differences in relation to eating pathology.

Whilst the current study reported gender differences in relation to maladaptive eating practices in younger participants, no gender differences were found in relation to maladaptive perfectionism or psychological wellbeing. Results indicated that increased levels of maladaptive perfectionism predicted increased levels of maladaptive eating practices in both genders. As younger males and females reported similar levels of maladaptive perfectionism but differed in the prevalence of maladaptive eating practices it is proposed that the pathways leading to eating pathology in younger individuals may differ for males and females. It is recommended that future research investigate additional variables that may interact with maladaptive perfectionism to increase the likelihood of young females engaging in maladaptive eating practices.

The current results also supported hypothesis two, indicating that psychological wellbeing mediated the relationship between maladaptive perfectionism and maladaptive eating practices. The current results suggest that maladaptive perfectionism produces a stronger relationship with maladaptive eating practices when psychological wellbeing is low. This finding was true for the entire sample as well as males and females assessed independently. This suggests that whilst maladaptive eating practices may be more common in female populations, maladaptive perfectionism and

psychological wellbeing are important constructs in the development of maladaptive eating practices for both males and females.

Whilst psychological wellbeing was found to mediate the relationship between maladaptive perfectionism and maladaptive eating practices for both males and females, results only supported psychological wellbeing as a partial mediator in these relationships. This suggests that psychological wellbeing may not be the only variable that influences this relationship. This is not surprising as past research has found other variables including anxiety (Egan et al., 2013) and weight overvaluation (Joyce et al., 2012) to also mediate the relationship between perfectionism and maladaptive eating practices. Despite only supporting psychological wellbeing as a partial mediator in the relationship between maladaptive perfectionism and maladaptive eating practices, the current findings give support for the importance of psychological wellbeing in this relationship. It is suggested that increased psychological wellbeing may reduce the maladaptive aspects of perfectionism and in turn reduce the likelihood of a person engaging in maladaptive eating practices. These findings may have significant clinical implications with past research identifying maladaptive eating practices as an important factor in the development of eating disorders (Ebenreuter & Hicks, 2012). It is suggested that intervention and prevention programs for eating pathology aim to increase psychological wellbeing, particularly in individuals who experience increased levels of maladaptive perfectionism.

As previously mentioned, the PWS was chosen to measure psychological wellbeing as this scale was thought to best capture several dimensions of positive psychological functioning. By summing the six subscales of the PWS to obtain an overall measure of positive psychological functioning, the current study was able to highlight the importance of psychological wellbeing in the relationship between maladaptive perfectionism and maladaptive eating practices. It is recommended that future research explore how each of the six subscales of the PWS independently influences this relationship. It is expected that particular dimensions of psychological wellbeing, as measured by the subscales of the PWS, will be more influential in minimising maladaptive aspects of perfectionism and in turn reducing the prevalence of eating pathology when compared to other dimensions. It is expected that identifying these specific aspects of psychological wellbeing will allow for a more tailored approach to eating pathology prevention and intervention programs.

Despite promising findings, the current study contains some limitations that may hinder the generalizability of the results. An important limitation to note is the use of a non-experimental design. Consequently, casual inferences about the relationships between variables cannot be made. Results indicate that maladaptive perfectionism and psychological wellbeing significantly predict maladaptive eating practices. However, it is not known whether increased levels of psychological wellbeing acts as a protective factor for the development of unhealthy eating practices, or whether individuals who engage in maladaptive eating practices experience lower psychological wellbeing as a result of dissatisfaction with their appearance. Whilst a causal relationship cannot be confirmed from the current study, these findings make significant contributions to the current body of literature by providing further insight into the psychological variables relating to perfectionism and maladaptive

eating practices. Further research using an experimental design would provide information regarding the causal nature of these relationships.

A further potential limitation with the current study is the use of self-report measures. Self-report measures have been found to be associated with social desirability responding (Fisher, 1993). This is particularly relevant when assessing maladaptive eating practices. Individuals who engage in unhealthy eating practices may be reluctant to disclose information about their eating behaviour. It may have been appropriate to include a measure of social desirability to better control for possible response biases. Conversely, participants may not believe that their eating behaviours substitute maladaptive eating practices. In such situations, subjective self-report measures may not provide the most accurate information. Gaining collateral information, by means of structured interviews, would have enhanced the external validity of the study.

Despite potential limitations, by emphasizing psychological wellbeing, the current study makes an important contribution to the eating pathology literature and provides directions for future research. To the author's knowledge, this is the first study that has examined, and has given support for, psychological wellbeing as a mediating variable in the relationship between perfectionism and maladaptive eating practices. Additionally, the current findings suggest that gender differences apparent in relation to eating pathology may be related to age, with young females appearing to be at the greatest risk. Further research should explore how the risk factors leading to eating pathology interact differently depending on age and gender.

References

- Bardone-Cone, A. M., Sturm, K., Lawson, M. A., Robinson, D. P., & Smith, R. (2010). Perfectionism across stages of recovery from eating disorders. *International Journal of Eating Disorders, 43*, 139-148. doi:10.1002/eat.20674
- Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology Review, 27*, 384-405. doi:10.1016/j.cpr.2006.12.005
- Boone, L., Braet, C., Vandereycken, W., & Claes, L. (2012). Are maladaptive schema domains and perfectionism related to body image concerns in eating disorder patients? *European Eating Disorders Review, 21*, 45-51. doi:10.1002/erv.2175
- Boone, L., Soenens, B., & Braet, C. (2011). Perfectionism, body dissatisfaction, and bulimic symptoms: The intervening role of perceived pressure to be thin and thin ideal internalization. *Journal of Social and Clinical Psychology, 30*, 1043-1068. doi: 10.1521/jscp.2011.30.10.1043
- Bulik, C. M., Tozzi, F., Anderson, C., Mazzeo, S. E., Aggen, S., & Sullivan, P. F. (2003). The relation between eating disorders and components of perfectionism. *American Journal of Psychiatry, 160*, 366-368. doi: 10.1176%2Fappi.ajp.160.2.366
- Butt, F. M. (2010). The role of perfectionism in psychological health: A study of adolescents in Pakistan. *Europe's Journal of Psychology, 6*, 125 – 147.
- Chan, D. W. (2007). Positive and negative perfectionism among Chinese gifted students in Hong Kong: Their relationships to general self-efficacy and subjective well-being. *Journal for the Education of the Gifted, 31*, 77-102. Retrieved from <http://search.proquest.com/docview/222369065?accountid=26503>
- Croll, J., Neumark-Sztainer, D., Story, M., & Ireland, M. (2002). Prevalence and risk and protective factors related to disordered eating behaviours among adolescents: Relationship to gender and ethnicity. *Journal of Adolescent Health, 31*, 166-175. doi: 10.1016/S1054-139X(02)00368-3
- Dakanalis, A. & Riva, G. (2013). Mass media, body image and eating disturbances: the underlying mechanism through the lens of the objectification theory. *Body Image: Gender Differences, Sociocultural Influences and Health Implication, 217 – 236*.

- Day, J., Ternouth, A., & Collier, D.A. (2009). Eating disorders and obesity: Two sides of the same coin? *Epidemiol. Psychiatr Soc*, 18, 96-100
- Diener, E., Oishi, S., & Lucas, R. E. (2009). *Subjective well-being: The science of happiness and life satisfaction*. Oxford Handbook of Positive Psychology (2ed). New York: Oxford University Press.
- Ebenreuter, J. L., & Hicks, R. E. (2012). Maladaptive eating practices as precursors to eating disorders: A method of assessment. In L. Ricciardelli & M. Caltabiono (Eds), *The Wiley-Blackwell handbook of applied topics in health psychology*. West Sussex, UK: John Wiley & Sons, Ltd.
- Edman, J. L., Yates, A., Aruguete, M., & Draeger, J. (2008). Eating attitudes, self-dissatisfaction and emotional distress among early adolescents in Hawaii: A gender comparison. *Journal of Pacific Rim Psychology*, 2, 53-59. doi:10.1375/prp.2.2.53
- Egan, S. J., Watson, H. J., Kane, R. T., McEvoy, P., Fursland, A., & Nathan, P. R. (2013). Anxiety as a mediator between perfectionism and eating disorders. *Cognitive Therapy and Research*, 37, 1-9. doi:10.1007/s10608-012-9516-x
- Fairburn, C. G. & Harrison, P. J. (2003). Eating Disorders. *The Lancet*, 361, 407-416. doi:10.1016/S0140-6736(03)12378-1
- Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research*, 20, 303-315. doi: [10.1086/209351](https://doi.org/10.1086/209351)
- Forbush, K., Heatherton, T. F., & Keel, P. K. (2007). Relationships between perfectionism and specific disordered eating behaviours. *International Journal of Eating Disorders*, 40, 37-41. doi:10.1002/eat.20310
- Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14, 449-468. doi:0147-5916/90/1000-0449\$06.00/0
- Gonzalez, A., Kohn, M. R., & Clarke, S. D. (2007). Eating disorders in adolescents. *Australian Family Physician*, 36, 614-619. Retrieved from <http://search.proquest.com/docview/216300392?accountid=26503>
- Grammas, D. L., & Schwartz, J. P. (2009). Internalization of messages from society and perfectionism as predictors of male body image. *Body Image*, 6, 31-36. doi:10.1016/j.bodyim.2008.10.002
- Grigg, M., Bowman, J., & Redman, S. (1996). Disordered eating and unhealthy weight reduction practices among adolescent females. *Preventive Medicine*, 25, 748-756. doi:10.1006/pmed.1996.0115

- Hautala, L. A., Junnilla, J., Helenius, H., Väänänen, A-M., Liuksila, P-R., Rähä, H., Välimäki, M. and Saarijärvi, S. (2008), Towards understanding gender differences in disordered eating among adolescents. *Journal of Clinical Nursing*, 17, 1803–1813. Doi. 10.1111/j.1365-2702.2007.02143.x
- Hewitt, P. & Flett, G. (1989). The multidimensional perfectionism scale: Development and validation. *Canadian Psychology*, 30, 339.
- Holmstrom, A. J. (2004). The effects of the media on body image: A meta-analysis. *Journal of Broadcasting and Electric Media*, 48, 196 – 217. doi. 10.1207/s15506878jobem4802_3
- Hudson, J. I., Hiripi, E., Pope Jr, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the national co-morbidity survey replication. *Biological Psychiatry*, 61, 348-358. doi:10.1016/j.biopsych.2006.03.040
- Joyce, F., Watson, H. J., Egan, S. J., & Kane, R. T. (2012). Mediators between perfectionism and eating disorder psychopathology in a community sample. *Eating Behaviours*, 13, 361-365. doi:10.1016/j.eatbeh.2012.07.002
- Juarascio, A. S., Perone, J., & Timko, C. A. (2011). Moderators of the relationship between body image dissatisfaction and disordered eating. *Eating Disorders*, 19, 346-354. doi:10.1080/10640266.2011.584811
- Kitsantas, A., Gilligan, T. D., & Kamata, A. (2003). College women with eating disorders: Self-regulation, life satisfaction, and positive/negative affect. *The Journal of Psychology*, 137, 381-395. doi:10.1080/00223980309600622
- Knauss, C., Paxton, S. J., & Alsaker, F. D. (2007). Relationships amongst body dissatisfaction, internalisation of the media body ideal and perceived pressure from media in adolescent girls and boys. *Body Image*, 4, 353-360. doi:10.1016/j.bodyim.2007.06.007
- Leit, R. A., Pope, H. G., & Gray, J. J. (2001). Cultural expectations of muscularity in men: The evolution of playgirl centrefolds. *International Journal of Eating Disorders*, 29, 90-93. doi:10.1002/1098-108X(200101)29:1<90::AID-EAT15>3.0.CO;2-F
- Lowry, R., Galuska, D. A., Fulton, J. E., Wechsler, H., & Kann, L. (2002). Weight management goals and practices among US high school students: Associations with physical activity, diet, and smoking. *Journal of Adolescent Health*, 31, 133-144. doi:10.1016/S1054-139X(01)00408-6

- McCabe, M. P. & Ricciardelli, L. A. (2004). A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychological Bulletin*, 130, 179. doi: 10.1037/0033-2909.130.2.179
- National Eating Disorders Collaboration (2014). *Eating disorders and obesity*. Retrieved April 5th 2014, from : <http://www.nede.com.au/eating-disorders-and-obesity>
- National Eating Disorders Collaboration (2014, March 7th). Eating Disorders in Australia. National Eating Disorders Collaboration. Retrieved April 2, 2014, from <http://www.nedc.com.au/eating-disorders-in-australia>
- Neumark-Sztainer, D., Butler, R., & Palti, H. (1995). Eating disturbances among adolescent girls: Evaluation of a school-based primary prevention program. *Journal of Nutrition Education*, 27, 24-31. doi:10.1016/S0022-3182(12)80262-7
- Noll, S. M., & Fredrickson, B. L. (1998). A meditational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly*, 22, 623-636. doi:10.1111%2Fj.1471-6402.1998.tb00181.x
- Quick, V., Larson, N., Eisenberg, M. E., Hannan, P. J., & Neumark-Sztainer, D. (2012). Self-weighing behaviours in young adults: tipping the scale toward unhealthy eating behaviours? *Journal of Adolescent Health*, 51, 468-474.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141-66.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of personality and social psychology*, 57, 1069. doi.10.1037/0022-3514.57.6.1069
- Schwartz, M.B., & Henderson, K.E. (2009). Does obesity prevention cause eating disorders? *Journal of the American Academy of Child and Adolescent Psychiatry*, 48, 784-786
- Sparhawk, J. M (2003). *Body image and the media: The medias influence on body image* (Doctoral dissertation, University of Wisconsin)
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, 128, 825. doi: 10.1037/0033-2909.128.5.825

Stuart, J. (2009). *Maladaptive perfectionism and disordered eating in college women: The mediating role of self-compassion. (Doctoral Dissertation). Available from ProQuest Dissertations and Theses database. (Order No. 3386001, University of Florida).*

Tomba, E., Offidani, E., Tecuta, L., Schumann, R. and Ballardini, D. (2014), Psychological well-being in out-patients with eating disorders: A controlled study. *International Journal of Eating Disorders*, 47, 252–258. doi: 10.1002/eat.22197

Wade, T. D., & Tiggemann, M. (2013). The role of perfectionism in body dissatisfaction. *Journal of Eating Disorders*, 1, 2 – 8. doi: 10.1186/2050-2974-1-2