

Trait Resilience as a Mediator Between Maladaptive Perfectionism, Anxiety, Depression  
and Stress in College Students

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Abstract

Little research has been conducted into the relationship between perfectionism and resilience. The current study investigated the relationship between dimensions of perfectionism, resilience, and negative mental health outcomes. Resilience was also investigated as a potential mediator between maladaptive perfectionism and anxiety, depression and stress respectively. A convenient snowball sample of 75 Irish college students participated in the study. The sample consisted of 56 females and 19 males ranging in age from 18 to 24 years old ( $M = 20.33$ ;  $SD = 1.23$ ). The Almost Perfect Scale – Revised (APS-R), the Dispositional Resilience Scale – Short Form (DRS-SF), and the Depression Anxiety and Stress Scale (21 item) (DASS-21) were used to measure perfectionism, resilience and negative mental health outcomes respectively. Results indicate that a strong, negative relationship exists between maladaptive perfectionism and resilience however, resilience did not mediate the relationship between maladaptive perfectionism and any of the three mental health outcomes. Conflicting evidence exists in relation to resilience as a mediator between maladaptive perfectionism and college student mental health, however resilience appears to be an important component to consider in relation to the development and maintenance of this relationship. Resilience should be considered for future interventions pertaining to perfectionistic individuals.

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## **Trait Resilience as a Mediator Between Maladaptive Perfectionism, Anxiety, Depression and Stress in College Students**

Research into the construct of perfectionism has increased substantially over the last 30 years, indicating its growing importance within the clinical field. The empirical literature consistently associates perfectionism with numerous detrimental psychological outcomes such as anxiety (Kawamura, Hunt, Frost, & DiBartolo, 2001), elevated levels of stress (Hewitt & Flett, 2002), depression and suicidal ideation (Hewitt & Flett, 1991a). Studies show that maladaptive perfectionism is not only highly correlated with negative psychopathological outcomes but that it also actively and significantly impedes the successful treatment of these mental disorders (Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998; Egan, Wade, & Shafran, 2011). It is therefore of great importance to determine the mechanisms through which this relationship operates in order to enhance interventions to promote better mental health outcomes. As such, in the following review of empirical literature the relationship between perfectionism and negative mental health outcomes are discussed, and trait resilience is proposed as a potential mediator through which the relationships between maladaptive perfectionism and anxiety, depression and stress respectively, are affected.

### **Perfectionism as a Multidimensional Construct**

The earliest conceptualisations of perfectionism were predominantly unidimensional in nature and were exclusively associated with maladaptive psychological outcomes (Horney, 1950; Pacht, 1984; Piro, 1986). More recent studies, however, indicate that perfectionism is best conceptualised as a multidimensional construct. Hamachek (1978) was among the first to identify characteristic and behavioural distinctions between

the “normal” and the “neurotic” perfectionist. Hamachek theorised that where normal perfectionists set realistic standards for themselves, and gain satisfaction from their efforts to meet them, the neurotic perfectionist sets impossibly high and unattainable standards, and often experiences dissatisfaction with their efforts. A factor analysis, conducted by Frost, Heimberg, Holt, Mattia, and Neubauer (1993), comparing two measures of perfectionism – the Frost, Marten, Lahart & Rosenblate (1990) two-dimensional scale, and Hewitt & Flett (1991b) three-dimensional scale – provided support for this theory as it revealed two distinct dimensions of perfectionism. The first dimension centred around evaluative concerns over one’s behaviour, mistakes and failure, and parental criticism. This factor was significantly correlated with depression and negative affect. The second dimension included measures of organisation, and high standards for oneself and others, and was significantly correlated with positive affect and unrelated to depression. A further principle-components factor analysis, conducted by Suddarth and Slaney (2001), comparing three measures of perfectionism, (Frost et al., 1990; Hewitt & Flett, 1991b; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996) reflected Hamachek’s (1978) multidimensional theory and the findings of Frost et al. (1993), suggesting that perfectionism has distinct adaptive (e.g. high personal standards) and maladaptive (e.g. excessive concern over mistakes) factors.

Due to the complexity of the construct and its role in the aetiology of multiple psychological disorders (Egan et al., 2011) a universally applicable definition of perfectionism has not yet been established (Stairs, Smith, Zapolski, Combs, & Settles, 2012). However, it is generally accepted that adaptive perfectionism is characterised by a strong desire to excel, having high yet realistic standards, and a tendency towards order and organisation. It is associated with outcomes of positive affect, conscientiousness and



positive coping (Stoeber, Damien, & Madigan, 2018), and has been positively correlated with self-esteem, academic achievement, social integration and life satisfaction (Stoeber & Otto, 2006). Maladaptive perfectionism is generally characterized by having high unrealistic standards for oneself, unmerited concern over mistakes, over generalisation of failures, perceived discrepancy between one's desired and one's actual performance and an avoidance of negative consequences. It is strongly associated with psychological maladaptation and outcomes of negative affect, neuroticism and negative coping (Stoeber, et al., 2018). Several longitudinal studies have found that the relationship between maladaptive perfectionism and negative mental health outcomes is causal where maladaptive perfectionism is predictive of the development of symptoms of depression, anxiety and stress in both adolescents and adults (e.g. Flett & Hewitt, 2002; O'Connor, Rasmussen, & Hawton, 2009; Shafran & Mansell, 2001).

### **Maladaptive Perfectionism and Psychopathology in College Students**

Hewitt and Flett (1991b) reported a high propensity for perfectionism in college students. As well as this, a meta-analysis of 146 studies from between 1989 and 2016, on perfectionism in college students, appears to indicate that both adaptive and maladaptive perfectionism is increasing over time and across generations in this population (Curran & Hill, 2017). Whilst this finding is restricted to Caucasian, middle class, college students, it nevertheless indicates that this is a growing issue that needs to be addressed.

Students have also repeatedly been identified as a particularly high-risk group for the development of mental disorders such as depression and anxiety, and experience prolonged periods of highly elevated levels of stress. (e.g. Beiter et al., 2015; Eisenberg, Gollust, Golberstein, & Hefner, 2007). The notion that the transition to and experiences

associated with attending third level education are ones of challenge and stress is well-established (e.g. Richardson, Abraham, & Bond, 2012). A recent review of the preliminary results from the first stage of the WHO World Mental Health International College Student project reported that one in three first year college students, from 19 colleges across 8 different countries, suffered from at least one common DSM-IV anxiety or mood disorder (Auerbach et al., 2018). Additionally, Beiter et al. (2015) cited academic performance, pressure to succeed, and postgraduate plans as significant and highly prevalent worries within a sample of over 300 college students and found that these worries were positively and significantly associated with symptoms of depression, anxiety and elevated stress.

Maladaptive perfectionism has been shown to significantly exacerbate symptoms of depression, anxiety and stress in student populations (e.g. Hewitt & Flett, 1991b; Rice et al., 2006) and can have a large negative impact on motivation, academic performance and well-being in education settings (Stoeber & Rambow, 2007). Although maladaptive perfectionists typically perform comparably with other students (Grzegorek, Slaney, Franze, & Rice, 2004) the cognitive appraisal of their performance differs from adaptive and non-perfectionists. They often perceive discrepancies between their actual and desired performance, negatively interpret feedback related to performance and feel more inadequate than other students. This results in significantly increased experiences of stress among individuals scoring high in maladaptive perfectionism when compared to other students (Hewitt & Flett, 2002; Rice, Bair, Castro, Cohen, & Hood, 2003; Rice et al., 2006).

Given the perpetuated challenge and stress associated with college (i.e. continuous academic assessment and pressures to perform well academically over several years) (Richardson, Abraham, & Bond, 2012) this environment appears to be when maladaptive

perfectionists are most vulnerable to developing depression, anxiety and experiencing elevated levels of stress (Rice et al., 2006).

### **Maladaptive Perfectionism, Psychopathology and Treatment Outcomes**

Furthermore, there is a large volume of evidence to suggest that maladaptive perfectionism can impact one's willingness to engage in help-seeking behaviour and can actively impede the successful treatment of a wide variety of psychological disorders such as anxiety, depression, OCD and anorexia nervosa (e.g. Blatt et al., 1998; Egan et al., 2011). Hewitt et al. (2003) propose that this is due to the need for the maladaptive perfectionist to conceal and avoid both behavioural and verbal admissions of imperfection/failure, for fear of being perceived as less than perfect or as having failed in some way. The researchers found large significant correlations between this perfectionistic self-presentation (PSP) style and psychological distress in clinical and non-clinical samples. This is supported by a study conducted by Hewitt et al. (2008) who found that within a sample of college students, PSP was highly correlated with maladaptive perfectionism and that those scoring high in both maladaptive perfectionism and PSP reported clinical interviews as being significantly more threatening, distressing and less satisfying than their adaptive counterparts, making them far less likely to initiate and sustain a therapeutic alliance. This unwillingness to seek help and admit to feelings of being unable to cope is particularly relevant in the therapeutic setting as this behaviour has been found to negatively impact the interpersonal relationship between client and therapist, hindering chances of successful treatment outcomes in maladaptive perfectionist populations (Hewitt et al., 2003; Hewitt et al., 2008). Enhancing traits that promote help-seeking behaviour, positive coping, social support and enhanced interpersonal relations are

therefore proposed as a priority in interventions for individuals scoring high in maladaptive perfectionism.

### **Identifying Mediators Between Maladaptive Perfectionism and Psychopathology**

Whilst a clear link has been established between maladaptive perfectionism and psychopathology, little is known about how or why this relationship occurs. Research is therefore warranted to identify mechanisms through which maladaptive perfectionism operates. The need to identify mediators between maladaptive perfectionism and negative mental health outcomes has been reiterated in the empirical literature. A mediating variable, as defined by Baron and Kenny (1986) is “*the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest*” (p.1173). It is hoped that identifying such mechanisms will enhance intervention programmes to promote help-seeking behaviour, improve treatment outcomes and reduce psychological maladjustment (Flett & Hewitt, 2014; Hill & Curran, 2016; Lloyd, Schmidt, Khondoker, & Tchanturia, 2015; Rice, Vergara, & Aldea, 2006).

### **Trait Resilience**

One proposed mechanism, as suggested by Flett & Hewitt (2014), and on which, to the best of this researcher’s knowledge, little empirical research has thus far been carried out, is trait resilience. Trait resilience is broadly defined as a flexible set of attitudes that promote adaptive responses to both minor stressors and major adverse life events (Connor & Davidson, 2003; Luther et al., 2000; Neenan, 2009). The construct is characterised by one’s ability to ‘bounce back’ from negative emotional experiences and cope with adversity, reducing the probability that one will experience negative emotional responses (Block, & Block, 1980; Lazarus, 1993; Tugade, & Fredrickson, 2004). An important

distinction is to be made here. Several review articles indicate the lack of a uniform, operational definition within resilience literature (Windle, 2011). Various yet fundamentally different definitions are often used interchangeably, hindering researchers' ability to compare empirical findings and precluding meta-analyses (Davydov, Stewart, Ritchie, & Chaudieu, 2010; Luther, Cicchetti, & Becker, 2000). It is important therefore to draw a distinction between the different conceptualisations of resilience being employed to promote homogeneity across empirical studies and to provide theoretical boundaries within which to guide research inquiry (Fletcher & Sarkar, 2013). As such, the current study will examine empirical literature pertaining exclusively to trait resilience.

### **Trait Resilience and Psychopathology**

Trait resilience is associated with attitudes of positive outlook, finding positive meaning in adverse or high-stress situations (Tugade & Fredrickson, 2004), effective approaches to problem-solving, control (Connor & Davidson, 2003) adaptive cognitive appraisal of stressful events (Major, Richards, Cooper, Cozzarelli, & Zubek, 1998) and optimism (Neenan, 2009). These attitudes and behaviours underpin resilience and serve to enhance one's ability to positively adapt in the face of adversity (Block & Block, 1980; Block & Kremen, 1996; Fletcher & Sarkar, 2013). Higher levels of resilience have been found to predict higher levels of life satisfaction, positive affect and problem-solving skills across diverse samples of the population (Samani, Jokar, & Sahragard, 2007; Xing, & Sun, 2013). Conversely, lower levels of resilience are predictive of negative mental health outcomes, and are associated with lower levels of social support, avoidant coping skills, lower self-esteem, and negative cognitive appraisals of stressful situations (e.g. rumination and catastrophising) (Beutel, Glaesmer, Wiltink, Marian, & Brähler, 2010; Davydov et al., 2010; Southwick & Charney, 2012).

Furthermore, resilience has been found to mitigate the effects that stressful life events can have on the development of depression, anxiety and stress. A meta-analysis of 60 studies examining the relationship between trait resilience and mental health conducted by Hu, Zhang, & Wang (2015), found that levels of resilience were significantly lower in individuals with higher levels of depression and anxiety whilst higher levels of resilience were associated with positive mental health outcomes. Longitudinal studies examining the nature of this relationship indicate that it is causal, where low levels of resilience predict increased symptoms of depression and anxiety and increased stress across a variety of populations and age groups (e.g. Beutel et al., 2010; Hjemdal, Vogel, Solem, Hagen, & Stiles, 2011).

### **Trait Resilience and Maladaptive Perfectionism**

According to Hewitt and Flett (2002) a primary component in the maintenance of the relationship between maladaptive perfectionism and psychopathology is an impractical and maladaptive approach to stress and stress management. The researchers outline four ways in which stress contributes to this relationship: stress generation (pursuing unrealistic and unattainable standards; thus creating conditions of stress), stress anticipation (a preoccupation with potential sources of stress), stress perpetuation (engaging in behaviours that serve to prolong or compound feelings of stress such as rumination and catastrophising) and stress enhancement (amplifying stress by placing unmerited importance on minor failures, overgeneralising perceived failures and the adoption of ineffective coping and problem-solving skills). The researchers suggest that such an approach to stress and stress-management is detrimental to one's psychological and emotional well-being and undermines the adaptive attitudes associated with resilient individuals (as described above), preventing them from successfully overcoming adversity

and situations of heightened stress (Flett & Hewitt, 2014; Hewitt & Flett, 2002). In other words, it is proposed that maladaptive perfectionism is conducive to reduced engagement in resilience-enhancing behaviours and cognitions, resulting in increased levels of depression, stress and anxiety.

In accordance with this theory, significant associations between resilience-depleting behaviours and maladaptive perfectionism have been found consistently throughout the perfectionism literature but have yet to be directly tested. Research suggests that maladaptive perfectionism is associated with a variety of ineffective problem-solving strategies (Besser, Flett, & Hewitt, 2010), is negatively associated with social support and help-seeking behaviours (Hewitt, & Flett, 2008; Sherry, Law, Hewitt, Flett, & Besser, 2008), and is associated with post-task cognitive rumination and high negative cognitive appraisal of and affective reactions to failure (Besser, Flett, & Hewitt, 2004). Additionally, a study of perfectionism in one hundred college students revealed moderate positive correlations between maladaptive perfectionism and both self-blame and catastrophising, and moderate negative correlations between maladaptive perfectionism and positive reappraisal (Rudolph, Flett, & Hewitt, 2007).

Considered together, these findings indicate that individuals scoring high in maladaptive perfectionism approach stress and adversity with behaviours and thought processes that are conducive to lower levels of resilience to adversity, leading to increased instances of negative mental health outcomes such as anxiety, depression and elevated levels of stress. In this way, resilience is identified as a potential mediating variable between maladaptive perfectionism and anxiety, depression and stress respectively.

## **Trait Resilience as a Mediator Between Maladaptive Perfectionism and Psychopathology**

Further supporting the hypothesised mediating effects of resilience on this relationship is the association between resilience and a number of previously identified variables found to partially or fully mediate the relationship between perfectionism and negative mental health outcomes. Social support, associated with higher levels of resilience (Southwick & Charney, 2012), partially mediated the relationship between maladaptive perfectionism and depression in a cross-sectional sample of undergraduate psychology students (Sherry et al., 2008) and fully mediated this relationship in a clinical sample, as part of a four-year longitudinal study (Dunkley, Sanislow, Grilo, & McGlashan, 2009). Similarly, coping, a component of resilience, mediated this relationship. Problem focused coping (associated with higher levels of resilience), and both avoidant and emotion-focused coping (associated with lower levels of resilience), fully mediated the relationships between perfectionism and anxiety, stress and depression in samples of college students (Dunkley & Blankstein, 2000; Gnilka, Ashby, & Noble, 2012; Noble, Ashby, & Gnilka, 2014). Negative problem solving, strongly associated with lower resilience, also partially mediated the relationship between maladaptive perfectionism and depression in a sample of community members (Besser et al., 2010). Considering previously identified mediators between maladaptive perfectionism and anxiety, depression and stress respectively, tap into attitudes and behaviours associated with resilient individuals, it is likely that resilience will also mediate this relationship.

Thus far, and to the best of this researcher's knowledge, little empirical research has been dedicated to investigating the relationship between trait resilience and perfectionism and the potential mediating effects of resilience on the relationship between



maladaptive perfectionism and psychopathology. Only one study (Klibert et al., 2014) could be identified examining this relationship, and was conducted within a sample of North American Psychology students. The researchers found that resilience partially mediated the effects of maladaptive perfectionism on depression and anxiety. Given that so little research has been carried out on the relations between these variables, this study will investigate a sample of college students, from a variety of courses, to contribute to the limited empirical literature investigating this relationship and to examine whether the findings are further supported and generalisable to the collegiate population as a whole. Furthermore, this study will examine the mediating effects of resilience on the relationship between maladaptive perfectionism and stress, not examined by Klibert et al. (2014) for the reasons outlined in the above literature review.

### **Rationale for the Current Study**

The relationship between maladaptive perfectionism and negative psychological outcomes such as depression, anxiety and stress are well-established in the empirical literature. It is theorised that this relationship is maintained by the maladaptive attitudes adopted by maladaptive perfectionists in their approach to managing experiences of stress and adverse life events – resulting in increased vulnerability to the development of mental disorders such as anxiety and depression and experiences of elevated levels of stress. This relationship is also exacerbated by the unwillingness of maladaptive perfectionists to engage in help-seeking behaviour and seek social support in times of adversity for fear that they will be perceived as imperfect. These behaviours and cognitive processes are similar to those that undermine the adaptive attitudes associated with resilient individuals.

It is proposed that through this approach to stress management and adversity, that maladaptive perfectionism causes reduced instances of resilience in the individual, resulting in increased levels of negative mental health outcomes such as anxiety, depression and stress in response to both minor stressors and major adverse life events.

### **Research Aims and Hypotheses**

The aim of the current study is to investigate the potential mediating effects of resilience on the relationship between maladaptive perfectionism and anxiety, depression and stress respectively, in a general sample of college students.

The following research questions are proposed: Is resilience related to dimensions of perfectionism? Does resilience mediate the relationship between maladaptive perfectionism and anxiety in college students? Does resilience mediate the relationship between maladaptive perfectionism and depression in college students? Does resilience mediate the relationship between maladaptive perfectionism and stress in college students?

It is hypothesised that maladaptive perfectionism will be negatively associated with trait resilience (H1) and conversely that adaptive perfectionism will be positively associated with trait resilience (H2). It is also hypothesised that resilience will indirectly mediate the relationship between maladaptive perfectionism and anxiety (H3), maladaptive perfectionism and depression (H4) maladaptive perfectionism and stress (H5).

## Methods

### Participants

Participants in the current study consisted of 75 undergraduate college students, all studying full-time at universities in Ireland. Participants were recruited using a combination of non-probability sampling methods: convenience and snowball sampling. Of the sample obtained, 56 (74.7%) participants were female and 19 (25.3%) were male. Participants ranged in age from 18 to 24 years old ( $M = 20.33$ ;  $SD = 1.23$ ). Participants specified whether they held a position of part-time employment as well as studying full-time in college. 48 (64%) participants reported working a part-time job and 27 (36%) reported their only occupation as a full-time student. The sample was composed totally of Irish participants. All participants took part in the study having provided full and informed consent and specified that they were above the age of 18 years old.

### Design

This study implemented a cross-sectional, between-subjects design. For the purposes of examining the relationship between maladaptive perfectionism and resilience (H1) and adaptive perfectionism and resilience (H2), the independent variables were maladaptive and adaptive perfectionism and the dependent variable was resilience. For the purposes of mediation analysis, the predictor variable was maladaptive perfectionism, the mediator variable was resilience and the three criterion variables were anxiety, depression and stress.

### Materials

Participants self-reported on a number of demographic variables (age, gender, occupation and nationality) to give an indication as to the distribution of the sample.

### **Perfectionism Measure**

Almost Perfect Scale – Revised (APS-R) (Slaney et al., 1996). The APS-R is a 23-item self-report measure of three dimensions of perfectionism: Personal Standards (7 items), Order (4 items), Discrepancy (12 items). The Personal Standards subscale measures one's level of expectation for performance. Scores on this subscale typically correlate with adaptive psychological outcomes. The Order subscale measures one's preference for organisation and structure. The Discrepancy subscale measures the perceived difference between one's expected and one's actual performance. Scores on this subscale typically correlate with maladaptive psychological outcomes. Each subscale is measured on a 7-point Likert scale on which participants indicate their level of agreement ranging from 1= *Strongly Disagree* to 7 = *Strongly Agree*. All three subscales were administered to participants in the current study, however only the Personal Standards and Discrepancy scores were utilised for analyses. Scores on the Personal Standards scale range from 7-49. Scores on the Discrepancy scale range from 12-84. Total scores for each of the subscales are calculated where high scores indicate high levels of personal standards, and discrepancy respectively. Slaney et al. (2001) verified the validity and internal reliability of the APS-R, reporting Cronbach's coefficient alphas of .86 and .95 for Standards and Discrepancy respectively in a sample of college students. In the current study the Cronbach's coefficient alphas were considered good for Personal Standards ( $\alpha = .84$ ) and excellent for Discrepancy ( $\alpha = .95$ ).

### **Depression, Anxiety and Stress Measure**

Depression, Anxiety and Stress Scale, 21-Item (DASS-21) (Lovibond & Lovibond, 1995). The DASS-21 is a 21 item self-report measure of Depression (7 items), Anxiety (7

items) and Stress (7 items). The three subscales are measured on a 4-point Likert scale ranging from 0 = *Did Not Apply to me At All* to 3 = *Applied to me Very Much, or Most of the Time* on which participants indicate how often or how severely they experienced negative emotions over the last week. Scores for each of the subscales are totalled and doubled. On the anxiety subscale scores of 0-7, 8-9, 10-14, 15-19 and 20+ indicate normal, mild, moderate, severe and extremely severe levels of anxiety respectively. On the depression subscale scores of 0-9, 10-13, 14-20, 21-27 and 28+ indicate normal, mild, moderate, severe and extremely severe levels of depression respectively. On the stress subscale scores of 0-14, 15-18, 19-25, 26-33 and 34+ indicate normal, mild, moderate, severe and extremely severe levels of stress respectively. The DASS 21-item is not a clinical diagnostic measure of depression, anxiety or stress, however it provides a reliable indication of emotional distress in a variety of samples. The internal reliability of the scale is typically very high. For example, Antony et al. (1998) reported a Cronbach's coefficient alpha of .94, .87 and .91 for Depression, Anxiety and Stress respectively in a sample of clinical and non-clinical participants. The Cronbach's alphas calculated for the current study were considered good for Stress ( $\alpha = .86$ ) and Anxiety ( $\alpha = .83$ ), and excellent for Depression ( $\alpha = .91$ ).

### **Resilience Measure**

Dispositional Resilience Scale Short-Form (DRS-SF) (Bartone, Ursano, Wright, & Ingraham, 1989). The DRS-SF is a 30-item self-report measure of mental hardiness in adults. It consists of three subscales: Commitment (10 items), Control (10 items) and Challenge (10 items). Participants indicate how true they feel each statement is on a four-point Likert scale which ranges from 0 = *Not At All True* to 3 = *Completely True*. Items 3, 4, 5, 6, 8, 13, 16, 18, 19, 20, 22, 23, 25, 28 and 30 are reverse coded. Scores range from 0

to 90 where higher scores indicate a greater ability to overcome stressful situations. For the purposes of this study, only the total score of 30 items was considered. Bartone et al. (1989) reported a Cronbach's coefficient alpha of .85 for the DRS-SF. The Cronbach's alpha for the current study was acceptable ( $\alpha=.72$ ).

## **Procedure**

Prior to the commencement of data collection for the current research study, ethical approval was obtained from the National College of Ireland (NCI) Psychology Ethics Filter Committee. Once ethical approval had been obtained, the questionnaires were distributed online via social media platforms such as Facebook and Instagram. This ensured the anonymity of any individual who wished to partake in the study. The questionnaires were then shared/distributed further by individuals on these platforms. Before participants were directed to the questionnaires they were required to read an information sheet detailing the purpose of the study, their rights as a participant and assurances of anonymity and confidentiality. Participants were then asked to provide informed consent and confirm that they were over the age of 18 years old and currently enrolled as a full-time college student in Ireland. Having provided informed consent and confirmed the above, participants were asked a series of demographic questions including age, gender, nationality and whether they held a part-time/full-time job. Participants then completed the DRS-SF, APS-R and DASS 21-item scales in that order. Instructions were provided with each scale. Descriptions of what each answer on each scale indicated, and the context in which participants should give their answer were also given. Having completed the questionnaires, participants were asked to read a debrief sheet. All data was collected online through Google forms and was stored securely in a password protected file. Data collection was stopped once a sufficient number of participants had been

recruited for the study. The data was then transferred to a file in the Statistical Package for Social Sciences (SPSS) where descriptive and inferential statistics were calculated.

## Results

### Descriptive Statistics

Frequency statistics were produced for each categorical variable and are presented below in Table 1. Descriptive statistics were then calculated for each of the continuous variables (see Table 2). The mean, standard error mean, median, standard deviation, and range are reported for age, standards, discrepancy, stress, depression, anxiety and resilience. The descriptive data suggests moderate levels of stress and depression, and severe levels of anxiety on average within the sample. Inspection of the Kolmogorov-Smirnov tests indicated that four of the seven continuous variables were non-normally distributed: Age ( $p < .00$ ) Standards ( $p < .01$ ) Anxiety ( $p < .01$ ) and Depression ( $p < .02$ ). Examination of histograms and box plots revealed age, anxiety and depression were positively skewed whilst standards was negatively skewed.

Table 1

Frequencies for all categorical variables ( $n = 75$ ).

Variable	Frequency	Valid Percentage
<b>Gender</b>		
Male	19	25.3
Female	56	74.7
<b>Occupation</b>		
Part-time job	48	64
No-part time job	27	36

Table 2



Descriptive statistics of all continuous variables (n=75).

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	20.33 (20.05-20.62)	.14	20	1.23	18-24
Standards	39.55 (37.97-41.12)	.79	41	6.85	16-49
Discrepancy	54.19 (50.26-58.11)	1.97	54	17.07	21-84
Anxiety	16.35 (13.77-18.92)	1.29	14	11.21	0-42
Depression	17.95 (15.07-20.82)	1.44	16	12.49	0-42
Stress	21.97 (19.23-24.72)	1.38	24	11.94	0-42
Resilience	51.47 (49.54-53.40)	.97	51	8.39	34-76

### Inferential Statistics

The relationship between maladaptive perfectionism and resilience was investigated using a Pearson product-moment correlation coefficient. There was a strong negative correlation between the two variables,  $r(75) = -.56, p = <.01$ . This indicates that higher levels of maladaptive perfectionism are associated with lower levels of trait resilience (see Table 3).

The relationship between adaptive perfectionism and resilience was investigated using a Pearson product-moment correlation coefficient. There was no significant relationship between the two variables (see Table 3).

Preliminary correlations were run to investigate the relationship between all six primary variables using Pearson product-moment correlation coefficient (see Table 3) to

determine whether the hypothesised mediation models could be tested. Analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Adaptive perfectionism, as measured by personal standards on the APS-R, was unrelated to all five variables. There were strong, positive correlations between maladaptive perfectionism (measured by discrepancy) and each of the proposed criterion variables – anxiety, depression and stress – and a strong negative correlation with resilience. There were also moderate to strong negative correlations between resilience and anxiety, depression and stress. According to Baron and Kenny (1986) this satisfies the criteria upon which to conduct mediation analysis.

Several regression analyses were conducted to determine whether age and gender had confounding effects on any of the five primary variables utilised for mediation. No confounding effects were discovered; therefore, age and gender were not included in the following analyses.

Table 3

Correlations between all continuous variables ( $n=75$ ).

<b>Variables</b>	1	2	3	4	5	6
1. Standards	1					
2. Discrepancy	.13	1				
3. Resilience	.20	-.56**	1			
4. Anxiety	-.05	.58**	-.41**	1		
5. Depression	-.15	.71**	-.53**	.70**	1	

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6. Stress	.07	.58**	-.38**	.73**	.71**	1
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Note. Statistical significance: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

### Mediation Analysis

The current study tested three mediation hypotheses using the three-variable system, as outlined in Baron and Kenny (1986), through several multiple regression analyses. The first hypothesis examined resilience as the mediator in the relationship between maladaptive perfectionism (predictor) and depression (criterion). The second examined resilience as the mediator in the relationship between maladaptive perfectionism (predictor) and anxiety (criterion). The third mediation hypothesis examined resilience as the mediator in the relationship between maladaptive perfectionism (predictor) and stress (criterion). Preliminary analyses were performed to ensure no violation of the assumptions of homoscedasticity, linearity, normality and independence of residuals. Examination of scatter plots and normal probability plots produced with each regression confirmed no violation of these assumptions.

According to Baron and Kenny (1986) the following conditions must be present in order to establish mediation. In the first equation, the IV should significantly affect the mediator. In the second equation the IV should significantly affect the DV. In the third equation the mediator should significantly affect the DV. If these conditions hold then the conditions to conduct mediation are satisfied. A fourth equation determines the presence of a mediating effect, in which, when the mediator is control, the IV has a lessened effect on the DV. Full mediation occurs if the IV no longer has a significant effect on the DV.

#### Mediation 1

In step 1 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and depression as the criterion variable. The result was significant ( $\beta = .71, p < .001$ ).

In step 2 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and resilience as the criterion variable. The result was significant ( $\beta = -.55, p < .001$ )

In step 3 a regression analysis was conducted with resilience as the predictor variable and depression as the criterion variable. The result was significant ( $\beta = -.53, p < .001$ )

In step 4 a regression analysis was conducted with discrepancy and resilience as predictor variables and depression as the criterion variable. Resilience was no longer significant ( $p = .06$ ) and maladaptive perfectionism remained significant ( $p < .001$ ) indicating that no mediating effect took place (Baron & Kenny, 1986).

## **Mediation 2**

In step 1 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and anxiety as the criterion variable. The result was significant ( $\beta = .58, p < .001$ ).

In step 2 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and resilience as the criterion variable. The result was significant ( $\beta = -.55, p < .001$ ).

In step 3 a regression analysis was conducted with resilience as the predictor variable and anxiety as the criterion variable. The result was significant ( $\beta = -.41, p < .001$ )

In step 4 a regression analysis was conducted with maladaptive perfectionism and resilience as predictor variables and anxiety as the criterion variable. Resilience was no longer significant ( $p = .30$ ) and perfectionism remained significant ( $p < .001$ ) indicating that no mediating effect took place (Baron & Kenny, 1986).

### **Mediation 3**

In step 1 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and stress as the criterion variable. The result was significant ( $\beta = .58, p < .001$ ).

In step 2 a regression analysis was conducted with maladaptive perfectionism as the predictor variable and resilience as the criterion variable. The result was significant ( $\beta = -.55, p < .001$ ).

In step 3 a regression analysis was conducted with resilience as the predictor variable and stress as the criterion variable. The result was significant ( $\beta = -.38, p = .001$ ).

In step 4 a regression analysis was conducted with maladaptive perfectionism and resilience as predictor variables and stress as the criterion variable. Resilience was no longer significant ( $p = .48$ ) and perfectionism remained significant ( $p < .001$ ) indicating that no mediating effect took place (Baron & Kenny, 1986).

## Discussion

The broad aims of the current study were to further the understanding of the well-established relationship between maladaptive perfectionism and negative mental health outcomes such as anxiety, depression and stress in a general sample of college students. It was conducted with the view to contribute to the understanding of the mechanisms through which this relationship operates, and in doing so, improve preventions and interventions for depression, anxiety and stress in collegiate populations scoring high in maladaptive perfectionism. Resilience, to the best of this researcher's knowledge, has gone relatively untested as a mechanism through which maladaptive perfectionism influences mental health outcomes, and based on the reviewed literature was proposed as a potential mediator. Specifically, the hypotheses for the current study were that increased levels of maladaptive perfectionism would be significantly associated with decreased levels of resilience (H1), that increased levels of adaptive perfectionism would be significantly associated with increased levels of resilience (H2) and that resilience would indirectly mediate the relationship between maladaptive perfectionism and anxiety (H3), maladaptive perfectionism and depression (H4), and maladaptive perfectionism and stress (H5).

Results from the present study supported the first hypothesis. There was a significant, strong, negative correlation between the two variables, indicating that college students who scored higher in levels of maladaptive perfectionism, scored lower in levels of resilience. This is in keeping with the literature outlined in the introduction and suggests that maladaptive perfectionists are less adept at coping and overcoming negative emotional experiences and adversity. Maladaptive perfectionism also had significant, strong, positive relationships with anxiety, depression and stress as is consistent with previous empirical findings (e.g. Hewitt & Flett, 1991b; Stoeber et al., 2018). This indicates that as scores of

maladaptive perfectionism increased, so did levels of depression, anxiety and stress. Resilience had a significant, moderate to strong, negative relationship with anxiety, depression and stress which is congruent with previous empirical findings, suggesting that individuals lower in levels of resilience are more likely to experience negative affect and negative mental health outcomes (e.g. Hu et al., 2015; Hjemdal et al., 2010). Interestingly, the second hypothesis was not supported by the results of the current study. No relationship was found between adaptive perfectionism and resilience. This is in contrast to the evidence outlined in the literature review which suggests adaptive perfectionism is associated with adaptive responses – such as positive coping and optimism – to major adversity and minor stressors (Stoeber et al., 2018). A possible explanation for this unexpected finding lies within a study conducted by Ferrari and Mautz (1997). The researchers found that both adaptive and maladaptive perfectionists approach their goals with an inflexible set of attitudes and cognitive rigidity, making it difficult for perfectionists to adjust to change and cope with life stressors in realistic ways. This may explain why adaptive perfectionism was found to be unrelated to resilience in the current study, however further research is warranted to determine the nature of this relationship.

The third, fourth and fifth hypotheses were also not supported by the results of the present study. Although the conditions for mediation analyses (as described by Baron and Kenney, 1986) were present, it was found that resilience had no mediating effects on the relationships between maladaptive perfectionism and anxiety, depression or stress. Based on the results from the current study, hypothesis one is accepted, whilst hypotheses two, three, four and five are rejected.

Overall the results of the current study suggest that maladaptive perfectionists are less resilient to the negative emotional and psychological consequences associated with

experiences of both minor stressors and major adverse life events. This is consistent with Hewitt and Flett (2002) who suggest that maladaptive perfectionists do not bounce back from experiences of stress. Instead they engage in rumination of past failures and compound feelings of stress through catastrophising and avoidant coping methods, for example. Such maladaptive behaviours are consistent with those found in less resilient individuals, who find it more difficult to overcome negative life experiences (Beutel, et al., 2010; Davydov et al., 2010).

However, the current results do not indicate that resilience influences the relationship between maladaptive perfectionism and either anxiety, depression or stress. This is in contrast to the findings of Klibert et al. (2014) who found that, in a cross-sectional cohort of psychology students, resilience partially mediated the effects of maladaptive perfectionism on both anxiety and depression. The spurious nature of mediation analysis drawn from cross-sectional data could account for these conflicting findings. Although measures were taken by Klibert and colleagues to reduce the sometimes over-stated results of cross-sectional mediation analysis, the large sample size in their study may have contributed to the finding of significant results.

However, despite this, these studies identify resilience as an important, and thus far, relatively unexamined variable relating to maladaptive perfectionism. This has major implications for the development of intervention programmes relating to both the prevention of maladaptive perfectionism and the prevention of the associated negative psychological outcomes in collegiate populations scoring high in maladaptive perfectionism specifically. It indicates that resilience-enhancing interventions should not be excluded and provides researchers with impetus to explore further the efficacy of resilience in perfectionism interventions.



Furthermore, college administrators should endeavour to promote resilience-enhancing behaviours in college students. Holding workshops relating to positive coping strategies, effective problem-solving skills, stress management and offer social and counselling support could prove beneficial to minimising the association between maladaptive perfectionism and negative mental health outcomes. Similarly, clinicians should be aware that perfectionism is involved in the aetiology of a wide range of psychological disorders (Egan et al., 2011) and can seriously impede the successful treatment of these disorders. Evidence of perfectionistic tendencies or traits in individuals seeking mental health treatment should be observed for.

### **Limitations and Future Research**

There are several limitations that should be acknowledged when interpreting the results of the current study. First, the use of a cross-sectional design precludes causal inferences regarding the relationships between the variables and the findings of the mediation analyses. The use of cross-sectional data for the purposes of conducting mediation analysis has also been criticised as a biased means of testing for mediation effects. Maxwell and Cole (2007) found that utilising cross-sectional approaches to mediation analysis can result in substantially over- or underestimated effects and recommend the use of longitudinal designs, in which data is collected at a number of different time points, to infer causality. Although cross-sectional data is continuously utilised for mediation analysis by empirical researchers, results should be considered preliminary to a more costly and time-consuming longitudinal study. Future studies examining the relationship between resilience, maladaptive perfectionism and negative mental health outcomes should adopt a longitudinal approach to provide clarity on the nature of resilience as a mediator, as thus far cross-sectional studies have produced

conflicting results. Second, the measures used in the current study were self-report questionnaires. Self-report measures arguably lack ecological validity as they are not an accurate reflection of one's true feelings and are subject to social desirability biases (Van de Mortel, 2008). However, a strength of the current study is that it was conducted online and is therefore entirely anonymous, which may have yielded more honest answers to the questionnaires than in-person (Joinson, 1999). Third, males were under-represented in the current sample (25.3%) and so findings may be less relevant to male college students than to female college students. Caution is recommended when generalising the results to samples of male college students. Fourth, all items on the DASS-21 were highly intercorrelated indicating that each of the criterion variables may be tapping into the same construct. Future research might benefit from using separate, unrelated measures of depression, anxiety and stress.

### **Conclusion**

Little research has been conducted into the relations between maladaptive perfectionism, resilience and negative mental health outcomes. The current study found that high levels of maladaptive perfectionism were strongly and significantly associated with lower levels of resilience in a sample of college students, and that both maladaptive perfectionism and resilience were significantly related to depression, anxiety and stress. However, no mediating effects were found. This is contrast to a previous study that reported partial mediating effects of resilience between maladaptive perfectionism and both anxiety and depression. Further research is required into the relevance of resilience as a mediator between maladaptive perfectionism and mental health outcomes such as anxiety, depression and stress. Resilience-enhancing behaviours and attitudes should be

considered in future interventions for the prevention and management of maladaptive perfectionism.

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## Appendices

### Appendix A

#### Dispositional Resilience Scale

Test Format: Each item is rated on a 4-point scale: Not at all true = 0, A little true = 1, Quite true = 2, and Completely true = 3.

#### Instructions:

Below are statements about life that people often feel differently about. Circle a number to show how you feel about each one. Read the items carefully and indicate how much you think each one is true in general. There are no right or wrong answers; just give your own honest opinions.

Not true at all = 0. A little true = 1. Quite true = 2. Completely true = 3.

1. Most of my life gets spent doing things that are worthwhile (\*CM+)
2. Planning ahead can help avoid most future problems (\*CO+)
3. No matter how hard I try, my efforts usually accomplish nothing (\*CO)
4. I don't like to make changes in my everyday schedule (\*CH)
5. The "tried and true" ways are always best (\*CH)
6. Working hard doesn't matter since only the bosses profit from it (\*CM)
7. By working hard you can always achieve your goals (\*CM+)
8. Most of what happens in life is just meant to be (\*CO)
9. When I make plans, I'm certain I can make them work (\*CO+)
10. It's exciting to learn something about myself (\*CH+)
11. I really look forward to my work (\*CM+)
12. If I'm working on a difficult task, I know when to seek help (\*CO+)
13. I won't answer a question unless I'm really sure I understand it (\*CH)
14. I like a lot of variety in my work (\*CH+)
15. Most of the time, people listen carefully to what I say (\*CH+)
16. Thinking of yourself as a free person just leads to frustration (\*CM)
17. Trying your best at work really pays off in the end (\*CM+)
18. My mistakes are usually difficult to correct (\*CO)
19. It bothers me when my daily routine gets interrupted (\*CH)
20. Most good athletes and leaders are born, not made (\*CO)
21. I often wake up eager to take up my life wherever I left off (\*CH+)
22. Lots of times I don't really know my own mind (\*CM)
23. I respect rules because they guide me (\*CH)
24. I like it when things are uncertain or unpredictable (\*CH+)
25. I can't do much to prevent it if someone wants to harm me (\*CO)
26. Changes in routine are interesting to me (\*CH+)
27. Most days, life is really interesting and exciting for me (\*CM+)
28. It's hard to imagine anyone getting excited about working (\*CM)
29. What happens to me tomorrow depends on what I do today (\*CO+)
30. Ordinary work is just too boring to be worth doing (\*CM)

+ Items are positively scored; all others are negatively scored. CM = commitment; CO = control; CH = challenge

## Appendix B

### The Depression, Anxiety and Stress Scale 21-Item

Test Format: The DASS uses a 4-point Likert scale of frequency or severity of the participants' experiences over the last week. The rating scale is as follows: 0 = Did not apply to me at all; 1= Applied to me to some degree, or some of the time; 2= Applied to me to a considerable degree, or a good part of time; 3 = Applied to me very much, or most of the time.

Items:

#### DASS–21 Stress scale

I was intolerant of anything that kept me from getting on with what I was doing (14).

I felt I was rather touchy (18).

I found it difficult to relax (12).

I found myself getting agitated (11).

I felt that I was using a lot of nervous energy (8).

I found it hard to wind down (1).

I tended to over-react to situations (6).

#### DASS–21 Depression scale

I felt that life was meaningless (21).

I felt that I had nothing to look forward to (10).

I couldn't seem to experience any positive feeling at all (3).

I was unable to become enthusiastic about anything (16).

I felt that I wasn't worth much as a person (17).

I felt down-hearted and blue (13).

I found it difficult to work up the initiative to do things (5).

#### DASS–21 Anxiety scale

I was aware of the action of my heart in the absence of physical exertion (e.g., . . . ) (19).

I experienced breathing difficulty (e.g., . . . ) (4).

I experienced trembling (e.g., in the hands) (7).

I felt I was close to panic (15).

I felt scared without any good reason (20).

I was worried about situations in which I might panic and make a fool of myself (9).

I was aware of dryness of my mouth (2).

## Appendix C

### Almost Perfect Scale-Revised

Instructions: The following items are designed to measure attitudes people have toward themselves, their performance, and toward others. There are no right or wrong answers. Please respond to all of the items. Use your first impression and do not spend too much time on individual items in responding. Respond to each of the items using the scale below to describe your degree of agreement with each item. Fill in the appropriate number circle on the computer answer sheet that is provided.

1    2    3    4    5    6    7

Strongly Disagree   Disagree   Slightly Disagree   Neutral   Slightly Agree   Agree   Strongly Agree

1. I have high standards for my performance at work or at school.
2. I am an orderly person.
3. I often feel frustrated because I can't meet my goals.
4. Neatness is important to me.
5. If you don't expect much out of yourself, you will never succeed.
6. My best just never seems to be good enough for me.
7. I think things should be put away in their place
8. I have high expectations for myself.
9. I rarely live up to my high standards.
10. I like to always be organized and disciplined.
11. Doing my best never seems to be enough.
12. I set very high standards for myself.
13. I am never satisfied with my accomplishments.
14. I expect the best from myself.
15. I often worry about not measuring up to my own expectations.
16. My performance rarely measures up to my standards.
17. I am not satisfied even when I know I have done my best.

18. I try to do my best at everything I do.
19. I am seldom able to meet my own high standards of performance.
20. I am hardly ever satisfied with my performance.
21. I hardly ever feel that what I've done is good enough.
22. I have a strong need to strive for excellence.
23. I often feel disappointment after completing a task because I know I could have done better.

## Appendix D

### Information Sheet

#### Participant Requirements:

- Must be 18 years or older
- Must be currently enrolled full time in an Irish university

My name is Claire Harrington and I would like to invite you to participate in the study of “Resilience as a Mediator between Maladaptive Perfectionism and Mental Health in College Student” as part of my BA(Hons) Psychology final year research project. This will take roughly 15 minutes to complete.

The purpose of this study is to investigate the relationship between resilience, perfectionism and mental health factors such as stress, depression and anxiety in an Irish population. As part of this study you will be asked to fill out three short questionnaires in an online survey. You will also be asked some basic demographic questions (e.g. age, gender, etc.). You will not be asked to disclose your name, or any information that could possibly identify you.

#### Anonymity and Confidentiality:

Participation in this study is completely voluntary. If you should wish to withdraw from the study, even after consent has been given, you are free to do so and will not be penalised in any way – simply close the tab containing the questionnaires. Please note that once you have submitted your final answers it will be impossible to withdraw your data from the study as there will be no way of identifying which data belongs to whom. All data collected will be coded and therefore completely anonymous and will never be shared with



anyone except my supervisor and I. The overall results of this study will be presented in a thesis. This thesis will be viewed by my supervisor, a second examiner and an external examiner and may also be made available online and in print to future students of NCI.

## Appendix E

### Consent Form

I agree to participate in the study of “Resilience as a Mediator between Maladaptive Perfectionism and Mental Health in College Students”. The purpose and nature of the study has been explained to me in writing. I am participating voluntarily. I understand that I am free to withdraw from the study, without penalty and do not need to provide a reason for doing so. I understand that because my data will be made totally anonymous upon submitting it that I will not be able to withdraw from the study at this stage. I am over the age of 18 years.

## Appendix C

### Debriefing Form

I would like to take this opportunity to thank you for participating in this research study. The aim of this study was to further the research into the relationship between maladaptive perfectionism and the negative effects this can have on mental health and stress, particularly in student populations. If you have been affected by anything in this study, please contact me, my supervisor or any of the following support services, or your local GP. Samaritans, free phone 116123 or text 0872609090; Jigsaw (Dublin, 1) phone 01 658 3070.

Feel free to contact either me or my supervisor if you have any questions regarding the study or your participation. Thank you, again.