

Perfectionism, Attachment and Anxiety and Depression

Kirsty Fitzsimons

### **Abstract**

Previous research has indicated that there is an association between the discrepancy domain of perfectionism and anxiety and depression (Flett et al. 2007; Kawamura et al. 2001); with little research investigating the link's underpinnings. Of the research that has been conducted into the origins of perfectionism, results suggest that perfectionism is rooted in childhood experience (Enns et al. 2002) and that attachment style may be influential (Rice & Mirzadeh 2000). Therefore, an independent groups design was employed to investigate whether attachment style could predict the discrepancy domain of perfectionism and whether this domain was related to anxiety and depression. 41 undergraduate students completed copies of the HAD scale (Zigmond & Snaith 1983), the Adult Attachment scale (Collins & Read 1990) and the Almost Perfect Scale (Slaney et al. 2001). Results were analysed using linear regression analysis, finding that insecure attachment styles (anxious and avoidant) significantly predicted scores in the discrepancy domain of perfectionism and that this domain had a significant relationship with anxiety and depression scores.

<b>KEY WORDS:</b>	<b>PERFECTIONISM</b>	<b>ANXIETY</b>	<b>DEPRESSION</b>	<b>ATTACHMENT</b>
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## Introduction

What is perfectionism? At face value this appears a simple question, however if we were to examine the work of various researchers and academics we would soon find that there are a number of different approaches towards the concept. Superficially, one might suppose that perfectionism is the “Strive for excellence” or “flawlessness” and that when applied to all areas of one’s life, this may constitute “extreme” perfectionism. However, these superficial definitions are, in their very essence, far too shallow to communicate the multiple facets, dimensions and factors of perfectionism identified by decades of research. Hamachek (1978) regarded perfectionism as a combination of cognitive and behavioural tendencies that are associated with excessively high standards. Perfectionism is also one of the 16 personality factors identified by Cattell & Mead (2008) and is the extreme of conscientiousness in the Big Five personality traits (Digman 1990). Yet despite this, a clear, established definition has yet to be ascertained, with leading researchers in this area having yet to inaugurate an official definition. This has led to a number of problematic issues in regards to research; however, academics in this field have begun to identify and debate key aspects of this concept and as such a more coherent conceptualism of the construct has emerged (Flett & Hewitt 2002; Frost et al. 1990; Hewitt & Flett 1991).

## The Uni-Dimensional vs Multidimensional Debate:

One area of perfectionism that has been hotly debated for decades is whether the trait is unidimensional or multidimensional. Originally, perfectionism was considered to be an unidimensional personality trait with its origins in irrational cognitions and dysfunctional attitudes (Burns 1980; Jones 1968). This perspective viewed perfectionism as irrational because it involved a preoccupation with unrealistically high standards, neglecting the probability of success. Perfectionism then became dysfunctional when the inevitable failure to obtain such excessively high standards was met with unreasonably high self-reproach (Hall 2006). Following the work of Jones (1968), standardised scales were developed, focussing on the measurement of perfectionism, such as the Dysfunctional Attitudes Scale (Weissman & Beck 1978) and Burns’s (1980) later adaptation of this; however, these early scales cited no data on reliability, very little data on validity and the research upon which they were based was limited at best. Then, from the early 1990s, researchers began to view perfectionism as a multidimensional construct - i.e. as having both personal and interpersonal aspects; which, according to Flett & Hewitt (2002), was one of the most important developments in perfectionism research. This shift occurred as research began to identify interpersonal aspects of the construct, with Frost et al. (1990) greatly advancing the notion of perfectionism as a multidimensional construct. Frost et al. (1990) drew on existing research to posit a multidimensional conceptualisation of perfectionism that would, firstly, address the limitations of viewing perfectionism from a unidimensional perspective (e.g. no capacity for the inclusion of interpersonal aspects) and, secondly, fit well with existing literature on the multidimensionality of the concept. Frost et al. (1990) also developed the Frost Multidimensional Perfectionism Scale to measure the multidimensional aspects of perfectionism, which reports very high convergent, discriminant and construct validity (Frost et al. 1993).

The Frost Multidimensional Perfectionism Scale aims to measure perfectionism in the 6 proposed dimensions of perfectionism identified by Frost et al.'s (1990) research: (i) concern over mistakes (i.e. fear that one will lose others' respect following a mistake), (ii) doubts about actions (doubting one's performance quality), (iii) personal standards (i.e. extremely high goals), (iv) parental expectations (perception that parents expect perfection), (v) parental criticism (perception of parents being highly critical) and (vi) organisation (neatness and orderliness being very important). Frost et al.'s (1990) contributions have been demonstrated to be a reliable representation of perfectionism as a multidimensional construct; however, Parker & Adkins (1995) criticised the Frost Multidimensional Perfectionism Scale for being based upon research employing an all-female sample from an 'elite' university, claiming this was not representative of males or the general population.

An alternative approach to the Frost et al.'s (1990) conceptualisation of perfectionism as a multidimensional construct was proposed by Hewitt & Flett (1991). This approach was somewhat similar to that of Frost et al. (1990), yet the domains in which perfectionism was purported to be expressed are distinctly different. They proposed just 3 dimensions of perfectionism: (i) self-orientated perfectionism (setting excessively high standards for oneself), (ii) socially prescribed perfectionism (perception that others have excessively high expectations of oneself) and (iii) other-orientated perfectionism (setting of excessively high standards/expectations for others). Hewitt & Flett (1991) devised the Hewitt & Flett Multidimensional Perfectionism Scale based on this approach and demonstrated its reliability and validity in a number of studies (Hewitt et al. 1991; Hewitt & Flett 1991). However, much of the research supporting the reliability and validity of the Hewitt & Flett Multidimensional Perfectionism Scale was conducted amongst clinical samples of psychiatric inpatients, limiting its applicability to the general population.

Both approaches garnered a significant body of supporting research, which Frost et al. (1993) postulated is due to significant correlations between the dimensions of both scales. This suggests that both approaches are measuring and conceptualising the same thing; however, it is important to bear in mind that Frost et al.'s (1993) study is, to date, in isolation, with no further data to support its findings.

Another, more recent, multi-dimensional conceptualisation of perfectionism is Slaney et al.'s (2001) theory, which argues that perfectionism can be viewed in terms of the following dimensions: (i) excessively high standards, (ii) extreme orderliness, and (iii) discrepancy [between standards and perceived performance]. This is an innovative approach in that it considers how perfectionists view their performance in regards to their standards and provides a unique perspective on the concept of perfectionism. The model gave rise to the development of the Almost Perfect Scale (Slaney & Johnson 1992) and then to the Almost Perfect Scale Revised (Slaney et al. 2001); which Slaney et al. (2001), identified has having excellent convergent validity and good concurrent validity with the dimensions of the Hewitt & Flett Multidimensional Perfectionism Scale (Hewitt & Flett 1991).

Despite a large body of research undertaken over the past few decades giving strong support to the notion that perfectionism is a multidimensional construct; some researchers have put forward a need to return to a unidimensional approach (Rheume et al. 2000). However, acting on the best available evidence, this study regarded perfectionism as a multidimensional phenomenon; in particular it regarded perfectionism in terms of the model proposed by Slaney et al. (2001) due to its

inclusion of the discrepancy dimension and the comparative robustness of its supporting and underlying research.

### **Positive or Negative Perfectionism:**

Another area of perfectionism in which there is a degree of contention is whether perfectionism is a negative or positive phenomenon. According to Hewitt & Flett (2002), some perfectionism researchers argue that there is a tendency to concentrate on the negative features of perfectionism and ignore the positive – a notion supported by the fact that there is certainly more literature available regarding the negative aspects of this construct than the positive.

Originally, the notion of positive and negative perfectionism was proposed by Hamachek (1978), who argued there was a need to differentiate between *neurotic* and *normal* perfectionism. He described normal perfectionism as a striving for realistic standards leading to self-satisfaction and enhanced self-esteem. However, neurotic perfectionism, he argued, was the pursuit of excessively high standards, motivated by fear of failure and disappointing others (Hewitt & Flett 2002). Since Hamachek's work, authors have developed the concept of perfectionism to distinguish between negative and positive manifestations. According to Slade & Owens's (1998) *dual-process model of perfectionism*, the difference between the two is the underlying motivations behind the trait, or more specifically whether perfectionism is negatively or positively reinforced. This model looks at perfectionism from the perspective of Skinner's (1938) theories surrounding operant conditioning, arguing that a history of negative reinforcement prompts negative perfectionists to set unrealistic standards in striving for perfection in order to avoid mediocrity or personal failure.

Positive perfectionists, on the other hand, set realistically high goals and are sustained by positive reinforcement in the form of approval, personal success and elevated self-esteem. This model is supported by Bergman et al. (2007), who recruited 344 undergraduate students to complete the 'Positive and Negative Perfectionism Scale' (Terry-Short et al. 1995), alongside scales to measure levels of life satisfaction, depression and anxiety. Their results corroborated the notions set forth in Slade & Owens's (1998) model; however, the study faces criticism due to the sample's limited representativeness and the use of self-report measures, which are susceptible to bias. Bergman et al. (2007) also point out that whilst their data provides indicative support for the dual-process model, the support is not overwhelming. They conclude that their data provides evidence for "plausible" but "not fully articulated" differences between negative and positive perfectionism. Other similar studies (Fedewa et al. 2005; Mitchelson & Burns 1998) have also provided evidence for this model of perfectionism; however Flett & Hewitt (2006) heavily criticise the notion of positive perfectionism. They argue that perfectionism is not a dual-process and that the boundaries between conscientiousness and perfectionism have been blurred by researchers such as Slade & Owens (1998). They cite research which questions the adaptiveness of positive perfectionism (as defined in studies accepting the dual-process model) and argue that the usage of the term 'perfectionism' should be reserved for pathological forms of the behaviour. However the research cited by Flett & Hewitt (2006) is largely their own, which is limited by its small and largely female samples, and has a substantial focus on negative aspects

of perfectionism, with little or no focus on any of the proposed positive aspects of the construct. Furthermore their research does not focus on the underlying motivation for perfectionism, which is the basis of the dual process model.

An alternative to the dual-process model is proposed by Slaney & Johnson (1992), whose research concludes that the negative aspects of perfectionism experienced by some individuals is not due to the underlying motivations, but rather the discrepancy between an individual's high standards and their perceived ability to achieve them. Research in this area appears promising; having given rise to the *Almost Perfect Scale* (Slaney & Johnson 1992) and the *Almost Perfect Scale-Revised* (Slaney et al. 2001), providing convincing statistical support (Locicero 2001; Mobley et al. 2005; Slaney et al. 2001) and being commended by the critics of the dual-process model (Flett & Hewitt 2002). In light of these convincing arguments, alongside the evidence previously cited in regards to the comparative robustness of Slaney & Johnson's (1992) model and means of measuring perfectionism, perfectionism was regarded here in terms of Slaney & Johnson's (1992) model. This model is particularly useful as it accommodates the notion that perfectionism can be a positive or negative force, whilst offering statistical support for its discrepancy dimension, a statistically valid dimension unique to this model.

### **Perfectionism and Psychological Distress:**

Branching off from the debate surrounding negative and positive perfectionism is the link between mental distress and perfectionism; a link which proponents of negative perfectionism argue is demonstrative of perfectionism as a negative force (Hewitt & Flett 2002). Since research into perfectionism began, there has been an interest in maladjustment, mental distress and perfectionism; with research proposing that perfectionism motivated by fear of failure and low self-esteem can result in mental distress, such as clinical depression (Hewitt & Flett 1990), anxiety (Saboonchi & Lundh 1997), obsessive-compulsive disorder (Frost & Steketee 1997) and eating disorders (Bardone-Cone et al. 2007). However, here the focus is on the relationship between perfectionism and anxiety and depression.

There is a large body of research linking perfectionism to mental distress. Indeed, the first ever means of measuring perfectionism was the 6-item perfectionism subscale of Garner et al.'s (1983) Eating Disorder Inventory, the first area of mental distress to be linked to perfectionism (Flett & Hewitt 2002). The main areas of focus for researchers in terms of the relationship between mental distress and perfectionism are eating disorders, depression and anxiety (Cassin & Ronson 2005; Dunkley et al. 2006; Saboonchi & Lundh 1997), although links have also been made with other forms of distress such as obsessive compulsive disorder (Frost et al. 1990).

As mentioned, the first domain of mental distress to be linked to perfectionism was eating disorders, which is relevant to this study in that there is a documented link between eating disorders and anxiety and depression (Pallister & Waller 2008; Presnell et al. 2009; Safer & Darcy 2011). Results from randomised control trials comparing individuals with eating disorders to healthy controls found those with anorexia nervosa (AN) and bulimia nervosa (BN) scored much higher in the domains of self orientated perfectionism (holding excessively high standards for oneself) and

socially prescribed perfectionism (perception of others having high expectations of oneself) than controls (Cassin & Ranson 2005; Franco-Paredes et al. 2005). These studies, however, do not control for the co-morbidity of other disorders (e.g. depression) that commonly co-exist with eating disorders and have been found to be associated with perfectionism (Dunkley et al. 2006; Presnell et al. 2009). Therefore, these studies may well reflect the relationship between depression/anxiety and perfectionism, rather than eating disorders. This is especially true of binge eating disorder, which research has found to be associated with perfectionism but not independently of depression (Bardone-Cone et al. 2007).

As mentioned, research has also identified a consistent link between perfectionism and depression (Dunkley et al. 2006), with recent research focussing on the different dimensions of perfectionism and their relationship to the mood disorder. An investigation into the role of the dual process model of perfectionism found that depression correlated positively with perfectionism motivated by negative reinforcement (Bergman et al. 2007). However the sample was unrepresentative, with 90% being white females, and the data acquired in this study only provides indicative evidence for a link between depression and negative perfectionism.

Flett et al. (2007) investigated depression and perfectionism in terms of their multidimensional model of perfectionism, identifying that the trait was associated with elevated levels of depression. Further research has also found that the stability of the perfectionism trait is positively correlated with the severity of depression (Cox & Enns 2003) and the course of the illness (Hewitt et al. 1998). However, the correlational design of these three studies means causality cannot be established and research has yet to be published finding a cause and effect relationship between perfectionism and depression. In regards to the dimensions of the Multidimensional Perfectionism Scale, evidence suggests that there is a robust and significant relationship between self-orientated and socially prescribed perfectionism and depression (Flett et al. 2007) and suicidal ideation (Shafran & Mansell 2001). However, this link has only been established in student and psychiatric populations, having yet to be established amongst the general population.

In terms of Slaney & Johnson's (1992) construction of perfectionism, which was developed with the maladaptive aspects of the construct in mind (Flett & Hewitt 2002), research has shown that the discrepancy domain of perfectionism is linked to higher levels of depression (Accordino et al. 2000; Nounopoulos et al. 2006). However, to date this research has focussed largely on adolescents and school performance, without any studies investigating the relationship between Slaney & Johnson's (1992) model and depression within other settings or samples.

Perfectionism has also been associated with generalised anxiety disorder. An analysis of the relationship between different anxiety disorders and dimensions of the perfectionism trait found that many, but not all, forms of anxiety (including generalised anxiety disorder) were associated with perfectionism (Saboonchi & Lundh 1997). However, as a correlational study it cannot attest to a causal relationship and it may be the case that anxiety disorders foster perfectionism rather than *visa versa*. Another notion regarding the relationship between perfectionism and generalised anxiety disorder is that it may be a result of the relationship between depression and perfectionism. Kawamura et al. (2001) found that in all dimensions of perfectionism, except socially-prescribed, generalised anxiety disorder is associated with perfectionism only in relation to depression. However the study fails to identify

whether there are aspects of perfectionism in which depression is associated independently of anxiety disorders and, thus, whether generalised anxiety disorder is a result of depression in perfectionistic individuals or whether the two disorders are essentially interlinked.

Applying Slaney & Johnson's (1992) model, the discrepancy domain of perfectionism appears to be closely related to anxiety, with higher scores in this domain being associated with higher levels of anxiety (Bieling et al. 2004; Hill et al. 2004; Suddarth & Slaney 2001). However, as with research into depression and perfectionism, these studies focus largely on student populations, creating problems with representation. Furthermore, they include few controls on other factors that may be influencing anxiety levels, such as depression.

### **Origins of Perfectionism:**

Interest in the origins of perfectionism has grown substantially over the past decade, with the current zeitgeist being that the trait develops during childhood in response to parenting styles; with the children of perfectionistic parents being significantly more likely to develop both positive and negative perfectionistic traits. Furthermore, the experience of harsh parenting, characterised by criticalness, over-control and lack of care, by individuals was found to be associated solely with negative perfectionism (Enns et al. 2002; Frost et al. 1991; Hewitt & Flett 2002; Kawamura et al. 2002). Enns et al. (2002) also suggest that negative perfectionism may result from poor attachment in infancy; yet this is merely speculated and not tested in their study. The study itself can be criticised, however, in terms of its reliance on self-report studies of childhood experience – which may be biased due to memory deficits and social desirability. However, other research also emphasises the developmental origins of perfectionism, with Flett et al. (1995) finding a correlation between authoritarian parenting style and perfectionism. Yet it is worth noting that the correlation was only statistically significant amongst males. Further research has also supported the notions set out by Enns et al. (2002) and Flett et al. (1995), finding that exposure to parental perfectionism and authoritarian parenting styles lead to the development of a perfectionistic personality trait, particularly in the domain of socially prescribed perfectionism (Neumeister 2004). It is worth bearing in mind, however, that this study focussed solely on the experiences of “gifted” college students in the USA. Further research corroborates the suggestion that perfectionism may be related to a child's attachment style (Rice & Mirzadeh 2000); however this study only found that attachment could predict whether an individual expressed perfectionism positively or negatively and did not seek to demonstrate whether it could predict the emergence of perfectionism itself or what the consequences of this were. Nevertheless, it is a useful indication of a link between perfectionism and attachment.

### **Attachment and Perfectionism:**

Research into the developmental origins of perfectionism has uncovered a link between perfectionism and attachment style (Rice & Lopez 2004; Rice & Mirzadeh 2000; Ulu & Tezer 2010). The notion of attachment style is based upon the seminal works of Bowlby (1969, 1973) and Ainsworth (1978), describing the dynamics of



human relationships by focussing on the attachment of an infant to a primary care-giver and the impact this has on adult relationships. Attachment theory proposes that children instinctively attach to a care-giver in order to fulfil a biological need to survive and a psychological need for safety and security (Schaffer 2007). According to Bowlby (1969; 1973), children need to create a secure base from which to explore the world and this is facilitated via their attachment to a care-giver. Ainsworth (1978) expanded greatly on this in ground-breaking research, revealing the importance of infant attachment to both child and adult behaviour. Ainsworth's developments are based upon observational studies employing the "strange situation protocol", in which a parent and toddler were placed in an unfamiliar playroom and the child's response to the departure and return of their caregiver was recorded. From this, Ainsworth (1978) identified 3 main attachment styles: secure, anxious-insecure and avoidant-insecure. A secure attachment style is observed in children who are able to use a caregiver as a secure base in exploring their environment, who are observed to be distressed when a caregiver departs and who seek proximity and comfort upon their return. An anxious-insecure style child cannot use the parent as a secure base and seeks proximity before any separation occurs. The child is preoccupied with this proximity and distressed if the caregiver leaves, although upon the caregiver's return they are reluctant engage with them and display anger. Ainsworth (1978) proposed that this is due to inconsistent care-giving. The anxious-avoidant style is characterised by a lack of interaction with the caregiver, little/no distress upon departure and little/no response upon their return (Ainsworth et al. 1978; Miller 2005).

Following Ainsworth's work with infants and children, attachment theory was developed and applied to adults, in particular adult romantic relationships (Hazan & Shaver 1987), describing how childhood attachment can affect adult behaviour and social relations. According to research in this area (Bartholomew & Horowitz 1991; Fraley & Shaver 2000; Hazan & Shaver 1990; Hazan & Shaver 1994), securely attached adults usually have a more positive outlook of the world and of themselves. They are comfortable with intimacy and independence, maintaining a healthy balance between the two. Anxious-insecure adults, on the other hand, tend to seek high levels of intimacy and approval from others and become extremely dependent on this. They are often less-trusting [than securely attached adults], view themselves and others less positively and are prone to excessive worrying or impulsiveness in relationships. Adults who have an avoidant-insecure attachment style tend to have either mixed feelings about relationships or want independence from attachment. They often view themselves as self-sufficient and not needing close relationships, with a tendency to suppress their feelings and deal with rejection by distancing themselves from those they have a poor opinion of.

A fourth attachment style, the disorganised style, has also been proposed. However, a meta-analysis of research regarding this style has found the reliability and discriminant validity of the construct to be weak (Ijzendoorn et al. 1999); although Ijzendoorn et al. (1999) do note that this may be due to difficulties in observing and coding behaviour associated with the style. Therefore, despite this proposal, the three attachment styles described in detail above are often viewed as the gold standard in research into attachment (Mills 2005) and, furthermore, many of the standardised attachment scales are based on Ainsworth's work, constructed around the notion of three attachment styles. Therefore, this study viewed attachment in

terms of Ainsworth's (1978) work and the associated standardised scales; however, it acknowledged that additional attachment styles have been proposed.

The impact of attachment has since been investigated in relation to personality and mental distress with research findings indicating that attachment can mediate a number of traits and difficulties including: personality disorders (Nakash-Eisikovits et al. 2002), depression (Meredith et al. 2007; Wei et al. 2004), anxiety (Cassidy et al. 2009; Viana & Rabian 2008), eating disorders (Barone & Guiducci 2009), perfectionism (Wei et al. 2006) and self-esteem (Foster et al. 2007). In terms of attachment and perfectionism, Crain (2005) proposes that an anxious-insecure attachment style may lead children to strive for perfection in order to win the love of their caregiver. Similarly, he argues that individuals with an avoidant-insecure style strive for perfectionism in order to avoid rejection from others.

Given the developmental basis of perfectionism and the importance of attachment in personality development, adult behaviour and psychological distress, recent research (Rice et al. 2005; Rice & Mirzadeh 2000; Ulu & Tezer 2010; Wei et al. 2004; Wei et al. 2006), has sought to investigate whether there is a link between attachment and perfectionism. Although it is worth noting that, to date, studies in this area are sparse, with just 5 [known] studies directly investigating this research area. Rice et al. (2005) found a significant relationship between attachment style and perfectionism in an in-depth study testing a model for predicting attachment orientations and perfectionism. However the study sample was disproportionately female (82%) and the authors did not elaborate on how this model may relate to adult behaviour or psychological distress.

Rice & Mirzadeh (2000), however, did investigate the relationship between attachment, perfectionism and psychological distress, finding that attachment style was able to predict whether an individual expressed perfectionism negatively or positively and that positive perfectionists were more securely attached. This shows that attachment style may influence the way in which the perfectionism trait is expressed and account for (at least in part) why some individuals express the trait positively and others negatively. However, the study has a number of limitations: firstly, whilst identifying that perfectionism's expression is influenced by attachment style, the study's design means that any links between all three variables can be made on an inferential basis only, meaning it cannot identify whether attachment mediates levels of distress in perfectionists. Secondly, the sample size was relatively small, with no documentation of power analysis, increasing the risk of statistical error. Furthermore, given the criticisms surrounding the dual process model of perfectionism, the validity of this data is open to a wide array of criticism. Therefore, in terms of the relationship between attachment, perfectionism and distress, although research has begun to identify links, the interaction of these factors is complex and research is, to date, in its infancy; therefore, further research is needed in order to establish a clear picture in this area.

### **Rationale:**

In light of research suggesting that attachment style can influence the expression of perfectionism (Rice & Mirzadeh 2000) and the relationships between perfectionism and anxiety and depression (Flett et al. 2007), it is important that the relationship

between these factors is investigated. To date, studies have either investigated the impact of attachment on the expression of perfectionism (i.e. positively or negatively) or the consequences of positive and negative perfectionism. This has left a research gap, meaning psychologists must infer links between attachment, perfectionism and psychopathology from research that is not designed for this purpose. Furthermore, the gap widens insofar as the relationship has only been investigated in terms of a limited number of models of perfectionism, ignoring more recent developments in conceptualising perfectionism, such as from Slaney & Johnson (1992) and their updated scale the Almost Perfect Scale – Revised (Slaney et al. 2001). Furthermore, it largely ignores the relationship between perfectionism's dimensions, attachment and distress. Therefore, this study proposed an investigation into the direct relationship between the dimensions of perfectionism, attachment and anxiety and depression. For the purpose of this study, perfectionism was viewed in terms of the theoretical underpinnings of Slaney et al.'s (2001) *Almost Perfect Scale – Revised*, which views perfectionism in terms of 3 dimensions: standards (setting excessively high standards), orderliness (a drive for excessive neatness/order) and discrepancy (the extent to which an individual feels they fail to meet their standards). Research suggests that individuals scoring highly in the discrepancy domain of perfectionism experience higher levels of anxiety and depression (Nounopopulos et al. 2006); however, no research has investigated the factors underlying the discrepancy domain or how/why this domain is linked to anxiety and depression. Therefore this study aimed to investigate whether attachment style is a significant predictor of participants' scores in the discrepancy domain of perfectionism and whether individuals' scores in this domain could predict their levels of anxiety and depression.

### **Hypotheses:**

Hypothesis 1 was that anxious and/or avoidant [insecure] attachment styles would be significant predictors of the discrepancy domain of perfectionism. The dependent variable was the discrepancy domain of perfectionism, with predictive variables being secure, anxious and avoidant attachment styles. Hypothesis 2 was that the discrepancy domain of perfectionism would be a significant predictor of anxiety and depression. The dependent variables were anxiety and depression, with predictive variables being the domains of the Almost Perfect Scale-Revised (Slaney et al. 2001): Standards, Orderliness and Discrepancy.

### **Method**

#### **Design:**

The study was a non-experimental study of an independent measures design, recording ordinal level data from 3 self-report questionnaires.

#### **Sample:**

The study's sample was a convenience sample of 41 (14 male and 27 female) undergraduate students attending psychology lectures at the University of

Salford. Participants' ages ranged from 18 to 48 years, with a mean age of 27.5 years. One participant did not record their age or gender. A priori power analysis, assuming a medium-high effect size (.25), indicated that a sample size of 48 was needed in order for results to be significant. However, in lieu of previous meta-analytic research into this area, the effect size used to calculate this number was estimated from a limited number of existing studies, rendering the priori power analysis statistically limited.

### **Materials:**

The study employed the following materials: a standardised brief, standardised instructions, consent form, the Almost Perfect Scale - Revised (Slaney et al. 2001), the Adult Attachment Scale (Collins & Read 1990), the Hospital Anxiety and Depression Scale (Zigmond & Snaith 1983) and a debrief sheet. The Almost Perfect Scale - Revised (Slaney et al. 2001) is a 23 item questionnaire with 3 domains: high standards, discrepancy and orderliness. It employs a Likert type rating scale from 1 (strongly disagree) to 7 (strongly agree), asking questions such as "I am an orderly person" and "doing my best never seems to be enough". Research has identified high convergent, concurrent (Rice & Ashby 2007) and discriminant (Slaney et al. 2001) validity for this scale and test-retest correlations have also been positive, with scores ranging from  $r = .72 - .87$  (Grzegorek et al. 2004; Rice & Aldea 2006).

The Adult Attachment Scale (Collins & Read 1990) consists of 21 items, rated on a five item Likert-style scale, where participants are asked how characteristic each item is of themselves. Values range from 1 "not at all" to 5 "very much so", with questions such as "I do not worry about being abandoned" and "I find it difficult to trust others completely". The scale's 3 subscales are comfort with emotional closeness, comfort depending on/trusting others and anxious concern over abandonment/being unloved and these are used to calculate an individual's score in three attachment styles: anxious, avoidant and secure. Chronbach's alpha coefficients regarding discriminatory validity and construct validity have been found to be  $>.7$ ; however, there are issues regarding its cross-cultural validity (Wu et al. 2004). The scale also has a test-retest validity of 70% over 4 years (Kirkpatrick & Hazan 1994). Factor analyses for the subscales revealed that the first subscales correlate with the avoidant attachment dimensions of other attachment scales ( $r = .86$ ,  $r = .79$  respectively) and the 3<sup>rd</sup> subscale correlates with anxious attachment styles ( $r = .74$ ) (Brennan et al. 1998).

The Hospital Anxiety and Depression scale (Zigmond & Snaith 1983) is a 14-item Likert-style questionnaire asking individuals to place a tick next to the answer they agree with for each question. Each answer has a score 0-3, with half the questions relating to anxiety level (e.g. "I feel tense or wound up") and half relating to depression (e.g. "I feel as if I am slowed down"). Scores are added up for each, with a score of  $>11$  indicating a clinically significant score. A review of 747 papers using the Hospital Anxiety and Depression scale found it had good convergent validity (chronbach's alpha .83) (Bjelland et al. 2002). Subscales have been found to be reliable and valid also, with chronbach's coefficients for depression and anxiety being .7 and .8 respectively (Higashi et al. 1996).

**Procedure:**

Participants were approached as a group before the beginning of a lecture and informed that the researcher was conducting a study on perfectionism, attachment and psychological distress. The study's aims and the potential risks (e.g. the potential for psychological harm) and benefits (making a valuable contribution towards understanding perfectionism and experience of taking part in research) were also discussed. The researcher then left copies of the research packs at the front of the lecture theatre and informed potential participants that should they wish to participate, they should read and follow the instructions found in the research packs and return completed questionnaires to either their lecturer or that they would be collected the following lecture.

Data was then recorded at ordinal level as follows: raw Adult Attachment Scale scores for Secure, Anxious and Avoidant attachment styles; the raw Almost Perfect Scale - Revised scores for the Standards, Orderliness and Discrepancy domains of perfectionism; and the raw Hospital Anxiety and Depression Scale scores for anxiety and depression.

**Statistical Analysis:**

Despite the recording of data at ordinal level, using likert scales, the statistical analysis used was a parametric test. This test was used as parametric tests are often considered superior to non-parametric analyses and the tests are robust enough to withstand the violation of the inferential data assumption, so long as the others are upheld (homogeneity of variance and normal distribution) (Conover 1981). Therefore, for the first hypothesis, data was analysed using a linear regression analysis, with the discrepancy domain of perfectionism as the dependent variable and attachment styles being predictors. A correlation was run between the anxious and avoidant styles prior to the regression analysis to identify potential collinearity, finding no correlation between these predictors. Data was entered using the enter method.

For the second hypothesis, data was, again, analysed using a linear regression analysis and entered using the enter method. Separate regression analyses were performed for each of the dependent variables: anxiety and depression. The same predictors were used for each analysis: standards, orderliness and discrepancy. A correlation was run between predictors to identify potential collinearity, finding some correlation between the standards dimension and the orderliness and discrepancy dimensions. However, research suggests this collinearity would not affect statistical data significantly (Mason & Perreault 1991). This method was employed in order to establish whether one variable could predict another, rather than to establish a cause and effect relationship, which would have required an alternative statistical analysis. A post-hoc power analysis was then run to establish whether the study had sufficient statistical power.

## Ethical Considerations:

The study was submitted to and accepted by the University of Salford ethics committee. The following ethical issues were considered: confidentiality, informed consent, right to withdraw and psychological distress. Confidentiality was addressed by assigning participants an anonymous identification number so that they could not be identified from their data. Informed consent was approached by utilising a brief and a consent form. The right to withdraw and protection from psychological harm were addressed on the brief and debrief, with contact details for removing their participation and also contacts for support on sensitive issues approached in the study, such as depression and anxiety.

## Results

### Descriptive

### Statistics

**Table 1**

Mean, range, variance and standard deviation of participants' scores in the dimensions of perfectionism measured by the Almost Perfect Scale – Revised (Slaney et al. 2001).

Variable	Mean	Std.Deviation	Range	Variance	Min Score	Max Score
Discrepancy Domain	49.17	20.20	71.00	408.15	12	84
Standards Domain	34.54	7.57	36.00	57.36	7	49
Orderliness Domain	17.00	6.38	29.00	40.70	5	35

This table shows that participants' mean scores in the discrepancy domain of the Almost Perfect Scale – Revised (Slaney et al. 2001) was 49.17, with a range of 71. The minimum possible score was 12, the maximum was 84, which alongside the range indicates there were individuals who scored both very high and very low in this domain. The mean score for the standards domain was 34.54, with a range of 46. The minimum score was 7 and the maximum 49, indicating that participants tended to score higher in this domain with less variation in scores. Participants scored a mean of 17 in the orderliness domain, with a range of 29 and minimum and maximum scores being 5 and 35, respectively. This indicates participants tended to score lower in this domain, although some scored quite highly and others very low. These results also offer support to Slaney et al.'s (2001) Almost Perfect Scale – Revised in the stark differences in scores recorded between domains.

**Table 2**

Mean, range, variance and standard deviation of participants' scores in the attachment styles measured by the Adult Attachment Scale (Collins & Read 1992).

Variable	Mean	Std.Deviation	Range	Variance	Min Score	Max Score
Secure Attachment Style	19.34	4.34	18.00	18.83	8	40
Anxious Attachment Style	14.93	4.17	16.00	17.37	8	40
Avoidant Attachment Style	14.63	4.24	18.00	17.94	8	40

This table reflects that participants' mean scores for the secure attachment style were the highest, at 19.34, and had a range of 18. Participants scored a mean of 14.93 for the anxious style, with a range of 16. For the avoidant style, participants' mean score was 14.63, with a range of 18. The minimum and maximum score for each style was 8 and 40, respectively.

**Table 3**

Mean, range, variance and standard deviation of participants' scores for anxiety and depression measured by the Hospital Anxiety and Depression Scale (Zigmond & Snaith 1983).

Variable	Mean	Std.Deviation	Range	Variance	Min Score	Max Score
Anxiety	7.88	4.22	18.00	17.81	0	21
Depression	5.85	3.95	15	15.63	0	21

This table shows that participants scored higher for anxiety overall, with a mean score of 7.88 and a range of 18. According to Zigmond & Snaith (1983) this score is on the borderline of clinically significant anxiety, yet the large range suggests some participants scored particularly high and others very low. The mean score for depression was 5.85 with a range of 15, again indicating some participants scored significantly higher than others. The minimum and maximum possible scores were between 0 and 21 for both.

### Inferential Statistics

**Table 4**

Linear regression analysis of attachment styles as predictors of the discrepancy domain of perfectionism.

Variable	$\beta$	$t$	$p$
Secure Style	-.27	-1.96	.06
Avoidant Style	.27	2.11	.04

Anxious Style	.47	3.77	<.01
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This data indicates that a secure attachment style is a negative predictor of the discrepancy domain of perfectionism (-.27), although this is not a significant value ( $p = .06$ ). Further research with a larger sample, however, may detect a significant effect. Both anxious and avoidant styles are positive predictors, with the anxious style having more of an impact on participants' scores in the discrepancy domain and both  $\beta$  values being significant to a .05 level.

**Table 5**

Model summary for the Linear regression analysis of attachment styles as predictors of the discrepancy domain of perfectionism using the enter method.

<i>R</i>	<i>df</i>	<i>F</i>	<i>p F</i>
.71	3	12.33	<.01

This summary indicates that attachment style accounts for 71% of the variance within participants' scores in the discrepancy domain of perfectionism.  $F = 12.33$ , indicating the model is very strong and it is significant to <.01 level.

**Table 6**

Linear regression analysis of perfectionism domains as predictors of depression.

<b>Variable</b>	$\beta$	<i>t</i>	<i>p</i>
Standards Domain	-.19	-1.01	.32
Orderliness Domain	-.22	-1.41	.17
Discrepancy Domain	.69	4.33	<.01

The data indicates that the standards domain of perfectionism is a negative predictor of depression (-.19), although this is not significant ( $p = .32$ ). The orderliness domain is also a negative predictor (-.22), however this is also non-significant (.17). The discrepancy domain, however, is a strong positive predictor of depression (.69) and this is significant to a .01 level.

**Table 7**

Model summary for the linear regression analysis of perfectionism domains as predictors of depression.



<b>R</b>	<b>df</b>	<b>F</b>	<b>p F</b>
.61	3	7.39	<.01

This data indicates that the domains of perfectionism can account for 61% of the variance within scores of depression measured by the HAD scale (Zigmond & Snaith 1983). The *F* value indicates the model is strong and is significant to a .01 level.

**Table 8**

Linear regression analysis of perfectionism domains as predictors of anxiety.

<b>Variable</b>	<b><math>\beta</math></b>	<b><i>t</i></b>	<b><i>p</i></b>
Standards Domain	-.20	-1.02	.32
Orderliness Domain	.03	.16	.88
Discrepancy Domain	.63	3.68	<.01

This table shows that the standards domain of perfectionism is a negative predictor of anxiety, although this is non-significant ( $p = .32$ ). The orderliness domain is a slight predictor of anxiety, yet this is highly non-significant ( $p = .88$ ). The discrepancy domain, however, is a strong predictor of anxiety (.63) and is significant to a .01 level.

**Table 9**

Model summary for the linear regression analysis of perfectionism domains as predictors of anxiety.

<b>R</b>	<b>df</b>	<b>F</b>	<b>p F</b>
.54	3	5.08	.01

This data shows that perfectionism accounts for 54% of the variance in participants' scores for depression on the HAD scale (Zigmond & Snaith 1983). It also shows that this is a moderately strong model and is significant to a .01 level.

### Summary of Data

Using the enter method of linear regression analysis, significant models emerged for predicting the discrepancy domain of perfectionism, anxiety and depression. The regression analysis showed that both anxious ( $\beta = .47$ ,  $t = 3.77$ ,  $p < .01$ ) and avoidant ( $\beta = .27$ ,  $t = 2.11$ ,  $p < .05$ ) attachment styles are significant predictors of the discrepancy domain of perfectionism. Furthermore, this model significantly

accounted for 71% of the variance within discrepancy scores ( $R = .71$ ,  $F = 12.33$ ,  $p < .01$ ). Regression analyses also showed that the discrepancy domain of perfectionism is a significant predictor of depression ( $\beta = .69$ ,  $t = 4.33$ ,  $p < .01$ ) and anxiety ( $\beta = .63$ ,  $t = 3.68$ ,  $p .01$ ) scores. These models were found to account for 61% of variance in depression scores ( $R = .61$ ,  $F = 7.39$ ,  $p < .01$ ) and 54% of variance in anxiety scores ( $R = .54$ ,  $F = 5.08$ ,  $p .01$ ). A post-hoc power analysis indicated that the study had an observed power of 0.99982, indicating the study had significant statistical power and results were not the product of statistical error in relation to power.

## Discussion

The aim of this study was to investigate whether attachment style could predict the discrepancy domain of perfectionism, the domain research has found to be associated with higher levels of psychological distress (Hill et al. 2004; Nounopulos et al. 2006). The results indicate that both the anxious and avoidant styles of attachment are significant predictors of scores in the discrepancy domain of perfectionism, supporting hypothesis 1. Furthermore, the results also corroborate previous studies indicating that the discrepancy domain of perfectionism is associated with higher levels of anxiety and depression, which is in line with hypothesis 2. This is demonstrated by the discrepancy domain of perfectionism being a significant predictor of anxiety and depression levels. The results also indicate that the secure style of attachment has a negative relationship with the discrepancy domain of perfectionism, although this is not to a significant level. However, the significance level is almost to a .05 level and it may be that a larger sample could detect a significant relationship.

## Implications of Findings:

The findings of this study have some important implications for research into perfectionism, attachment and mental distress. Since described by Hamachek (1978), perfectionism research has increased in volume from decade to decade; yet debates still exist in terms of dimensionality, whether the construct is positive or negative (or both) and the relationship between attachment and perfectionism.

In terms of dimensionality, the study supports the authors and researchers (e.g. Frost et al. 1990; Hewitt & Flett 1991) who have argued that perfectionism should be viewed as a multidimensional construct. This can be seen in the stark differences between the scores participants recorded in the different domains and the successful, significant use of Slaney et al.'s (2001) *Almost Perfect Scale*, which is a multidimensional scale. The sample also supports multidimensionality where other studies have fallen short; for example, the sample was of mixed gender, unlike Frost et al.'s (1990) sample which its critics argue is only representative of females (Parker & Adkins 1995). However, one limitation of this study's support for multidimensionality is the collinearity between the standards dimension and the other 2 dimensions, which suggests that perhaps these dimensions are measuring the same concept rather than independent dimensions. Although, this collinearity is more likely to be due to interdependence of the variables rather than a blurring of the boundaries between dimensions. Furthermore this study can only look at the

multidimensionality of perfectionism in terms of the model set forth by Slaney et al. (2001); yet this is not the only multidimensional model of perfectionism and its criticisms do not necessarily equate to the unidimensionality of perfectionism. Future research may wish to continue building upon the increasing evidence that perfectionism is a multidimensional construct and, also, look into the correlations between the dimensions of Slaney et al.'s (2001) model and what this means for this multidimensional approach to perfectionism.

In regards to the debate surrounding *negative* and *positive* perfectionism, this study suggests that there is a definite negative aspect to perfectionism, in that it is associated with increased levels of anxiety and depression amongst undergraduate students. Slaney & Johnson (1992) view perfectionism's reported negative and positive presentations as arising from the degree of discrepancy experienced by an individual between their high standards and perceived achievement and in this sense, the study does support the notion of negative perfectionism. However, it cannot be applied to the notion of positive perfectionism as it did not attempt to investigate the positive aspects proposed by researchers such as Bergman et al. (2007) and Terry-Short et al. (1995) (e.g. increased self-satisfaction and self-esteem).

### **Future Research Directions:**

Future studies wishing to replicate and/or improve on this study may wish to observe the limitations of this study when considering how best to improve the study's design. The author recommends increasing the sample size as, despite the power analysis indicating sufficient statistical power, an increased sample size may be necessary to detect smaller relationships – e.g. a significant negative relationship between secure attachment style and the discrepancy domain. The biggest recommendation for improvement within future research, in terms of the sample, is to include a larger diversity of groups, which would require an increased sample size in order to be able to generalise the study's results to other groups of individuals outside of undergraduate student populations.

Another avenue for improvement within future research may be to look at establishing a cause and effect relationship in this area; however research may prove to be challenging, as independent variables cannot be manipulated adequately. One option for testing cause and effect may be to conduct a study of a quasi-experimental design, allocating perfectionistic and non-perfectionistic individuals into corresponding groups and investigating the differences between these groups. The limitations of this approach may, however, outweigh its benefits in comparison to regression analysis; yet it is important to investigate causality and so this may prove a valuable option for future research.

Future research wishing to expand upon these findings has a number of potential directions in order to further investigate the debate surrounding negative and positive perfectionism. Firstly, it may be worthwhile to investigate whether an inverse relationship between pre-identified aspects of positive perfectionism and the predictors used in this study exists. For example, is there a negative relationship between self-satisfaction, self-esteem and the discrepancy domain of perfectionism? It may also be interesting to conduct a multiple regression analysis to investigate the

relationships between attachment, Slaney et al.'s (2001) model of perfectionism, self-esteem, self-satisfaction and life-satisfaction. This would be especially interesting in terms of Slaney et al.'s (2001) model as research has yet to be conducted in terms of the relationship between positive aspects of perfectionism and their domains of perfectionism. Another way in which future research could develop the results of this study is to investigate the positive aspects of perfectionism in relation to the discrepancy, standards and orderliness domains of perfectionism and also, perhaps their relationship to other areas of mental distress. This may be particularly relevant to the area of psychopathology as, although links have been made between discrepancy and depression (Nounopoulos et al. 2006), there is little/no research available in regards to Slaney et al.'s (2001) dimensions of perfectionism and the psychopathology identified as being related to perfectionism. For example, a future study may wish to focus on the relationship between discrepancy and anorexia nervosa; or orderliness and OCD. Furthermore, despite the broad range of participants included in this study, much of the research that has been conducted in relation to the discrepancy domain and mental distress has focussed largely on adolescent student samples, ignoring other groups and seriously limiting generalisability.

Another area which warrants investigation is whether anxiety and depression predict the discrepancy domain independently of each other. This is particularly relevant given that research, such as by Bardon-Cone et al. (2007), has found that variables relating to perfectionism can be interdependent on each other.

Future research should also continue to utilise a broad range of participants, as in this study, to investigate the relationship between mental distress and Slaney & Johnson's (1992) model of perfectionism within more generalisable samples.

This study utilised Slaney & Johnson's (1992) model of perfectionism and measured perfectionism using their scale. Yet, this approach is relatively novel and, therefore research using this tool is, as of yet, limited. However, the results of this study provide fuel for pushing forward with investigating perfectionism and future studies may wish to investigate the previous facets of perfectionism that were identified in studies utilising older models of perfectionism, in terms of this newer model. Furthermore, the concept of psychological distress in relation to this model of perfectionism has yet to be explored in depth and, as suggested, future research should consider investigating the relationship between this model and those areas identified in studies utilising older models. Such research would be advantageous as it may improve our understanding of perfectionism and allow us better insight into the psychological underpinnings of the relationship between perfectionism and mental distress.

In terms of attachment, this study was one of the first to investigate the relationship between attachment and perfectionism and the first (to the author's knowledge) to investigate this area in terms of Slaney & Johnson's (1992) model of perfectionism. Previous research has identified a positive relationship between perfectionism and attachment (Rice et al. 2005) and that attachment style can predict whether perfectionism is expressed positively or negatively (Rice & Mirzadeh 2000). However the previous studies into perfectionism and attachment investigated this area in the frame of older models of perfectionism, yet the results here indicate that research should explore attachment, mental distress and perfectionism in terms of Slaney &

Johnson's (1992) model and utilising Slaney et al.'s (2001) *Almost Perfect Scale - Revised*. Slaney & Johnson's (1992) model is, at present, under-represented in psychological research into perfectionism, due to its novelty. However, the results here indicate that greater representation and exploration is necessary. It may also be interesting to see if different insecure attachment styles are more associated with the perfectionism's negative expression in different areas; for example, does the anxious style lead to increased depression amongst perfectionists, yet the avoidant does not?

Finally, future studies may wish to expand research to encompass a wider demographic range and to identify differences between group characteristics such as age, gender, sexuality, ethnicity and social class. There are a diverse range of avenues for such research to explore, with potential focuses being on the any differences between these groups in terms of the relationships between the domains of perfectionism, attachment and mental distress.

### **Applying These Findings:**

In applying these findings, there are a number of areas in which they may be used to inform practice and improve services for students. The data indicating that anxiety and depression is significantly related to the discrepancy domain of perfectionism may be useful and services could be tailored to address the discrepancy between some students' unrealistically high standards and their perceived attainment. This could be achieved by informing university counselling services of the impact of discrepancy and that taking into account its impact on students' levels of anxiety and depression may result in better outcomes for students. If developed further and conducted in larger, more generalisable samples, this study and any future research in this area may also have the potential to inform psychological practice, such as within educational and clinical settings, and improve outcomes for service users.

### **Limitations of the Study:**

This study, however, suffered from limitations, which may be addressed in future research, of which the implications are discussed here. Firstly the sample recruited for the study was relatively small in size (n=41), which was due to the limited response from participants willing to take part in the study. Small sample sizes is problematic for research as it can result in a type 2 error and it can be more difficult to generalise findings to the wider population as they can be less representative (Coolican 2004). This sample was short of the number of participants required for the study to have sufficient statistical power, as indicated by the priori-power analysis; however, a post-hoc power-analysis revealed the study had an observed power of 0.9998, indicating the design, with this reduced sample size, was sufficiently powerful enough.

This study's sample was also restricted to sampling undergraduate psychology students, limiting the results' generalisability and representativeness. For example, research suggests that undergraduate students exhibit higher levels of perfectionism, anxiety and depression [than the general population] Onwuegbuzie & Daley (1999); a difference which may have skewed data into a misrepresentation of

the topic in terms of the general population. It is, therefore, possible that the relationship indicated in these statistics is unique to undergraduate students and non-applicable to other groups; however even if this is the case, with an expanding undergraduate population, it is significant to investigate factors influencing the expression of perfectionism, anxiety and depression amongst this group even if it is not generalisable to the rest of the population.

Another issue with the study is that potential presence of biases within the data due to social desirability or other related factors. Although the study was anonymous and participants were informed of this fact, it is possible that participants responded in a way in which they felt the researcher would want them to respond or in a way in which any attitudes they felt were socially undesirable were not disclosed. For example, the brief gave a good overview of the study's aims and, with undergraduate psychology students being more familiar with different standardised scales, they may have manipulated the answers to fit how they felt the researcher expected them to answer. Alternatively, individuals may have, for example, not wished to disclose how orderly they were because they felt it was abnormal or embarrassing. Also the use of self-reporting standardised scales are significantly susceptible to bias in that participants may not properly read and respond to the questions; instead they may have simply responded randomly in a bid to save time.

The study is subject to the limitations of using regression analysis, such as the fact that it does not provide evidence for a cause and effect relationship; therefore we cannot infer that the discrepancy domain of perfectionism is caused by an insecure attachment style or that it causes anxiety and depression (Chatterjee & Hadi 2006). Regression analysis attempts to determine the strength between two variables, therefore it can only infer the strength and direction of the relationship between these variables. Furthermore, regression analysis is susceptible to collinearity and auto-correlation (Coolican 2004). Collinearity is where predictor variables are correlated and, although the overall model is not largely affected, it can result in misleading figures for regression coefficients, their standard errors and/or associated *t*-tests (Mason & Perreault 1991). In this study, correlations were run to look for collinearity between predictors, finding that there was a significant correlation between the standards domain of perfectionism and the orderliness and discrepancy domains. However, there were no significant correlations between the orderliness and discrepancy domains. No significant correlations were found between the different styles of attachment, which were predictors of the discrepancy domain of perfectionism. These correlations suggest that there may have been some collinearity whilst using the perfectionism domains to predict anxiety and depression, resulting in potentially misleading inferential data. However there is little chance of collinearity between attachment styles when used as predictors of the discrepancy domain of perfectionism. Furthermore, as stated by Mason & Perreault (1991), collinearity has little impact on the overall model. Auto-correlation, usually only a problem for time-series data, is another limitation that could have been applicable to this data; however the Durbin-Watson statistics for all regression analyses performed in this study indicated that auto-correlation was not an issue present in this data.

## Conclusion:

To conclude, the study finds that there is a significant relationship between the discrepancy domain of perfectionism, attachment and anxiety and depression. The study was statistically robust, although there are some areas which future research may wish to improve upon, such as increasing the size and generalisability of the sample. The study has also uncovered new developments in perfectionism research, of which a number of future research directions have been indicated, including research into other areas of mental distress, attachment and the discrepancy domain of perfectionism. These findings hold significant implications services looking to assist or treat students experiencing anxiety and depression and future research may identify more still.

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