

Self-Compassion as a Mediator between Maladaptive Perfectionism and Anxiety in College

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April 2018

Submission of Thesis and Dissertation

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Acknowledgments

I wish to express my sincere gratitude to Michelle Kelly and Fearghal O'Brien for their continuous assistance and feedback regarding the undertaking and completion of this undergraduate final year project.

Additionally, to my family and friends, I extend my wholehearted appreciation in reciprocation for the loving support and encouragement. Particularly to my mother and father, I wish to pay tribute for their unfaltering devotion to see me succeed in college as well as in every other endeavour.

Lastly, I would like to convey my indebtedness to the college students who took time out from their busy schedules, who's individual participation formed the backbone of this research project. I could not have conducted my investigation without each of their contributions.

Abstract

The purpose of the following study is to investigate whether self-compassion is a mechanism/process underlying the connection between maladaptive perfectionism and anxiety. Therefore, it was hypothesised that self-compassion would mediate this maladaptive perfectionism-anxiety association which has been extensively reported throughout existing literature. Seventy-nine college students completed a set of four questionnaires: The Almost Perfect Scale-Revised (APS-R); The Self-Compassion Scale (SCS); The Beck Anxiety Inventory (BAI); and The Penn State Worry Questionnaire (PSWQ). Preliminary correlations confirmed that each of these variables were strongly and significantly correlated with one another. Subsequently, two mediation analyses were run, producing both a full and partial mediation. The full mediation was a product of somatic anxiety set as the outcome variable, whereas the partial mediation was consequence to cognitive anxiety thereafter replacing the previous. Findings suggest that maladaptive perfectionism possibly inhibits an individual from engaging in self-compassionate thoughts and emotions, rendering the individual susceptible to symptoms of anxiety. Aside from the pronounced implications relevant to the college student population, reinforcing evidence that self-compassion is applicable to the therapeutic setting is visible in that promoting self-compassion may assist clinical practices in reducing negative impacts of self-criticism, which have been reported to obstruct recovery outcomes in certain individuals.

Keywords: maladaptive perfectionism, self-compassion, anxiety, pathological worry, mediation analysis, college students, intervention programmes, compassion focused therapy

Contents

Introduction..... 6

Perfectionism 6

Maladaptive Perfectionism and Anxiety in College Students 8

Practical Relevance of Identifying Mediators for Intervention Programmes 10

Known Mediators between Maladaptive Perfectionism and Anxiety 10

Self-Compassion 11

Self-Compassion’s Relationship with known Mediators between Maladaptive Perfectionism and Anxiety..... 12

Self-Compassion and Anxiety 13

Self-Compassion and Maladaptive Perfectionism 14

Self-Compassion and Maladaptive Perfectionism within the Therapeutic Setting..... 15

Self-Compassion, Anxiety and Perfectionism..... 16

The Influence of Worry on Self-Compassion and Maladaptive Perfectionism’s Relationship with Anxiety..... 17

Rationale for the Current Study..... 18

Aims and Hypotheses..... 19

Methods..... 21

Participants..... 21

Materials 21

Design..... 24

Procedure..... 24

Results 26

Descriptive 26

Mediation analysis 29

Mediation 1..... 29

Mediation 2..... 30

Discussion 32

Limitations..... 38

Conclusion 40

References..... 41

Appendices..... 53

Introduction

The following review of literature conveys that a recurrent appearance of maladaptive perfectionism typically being found in individuals suffering from anxiety disorders is omnipresent therein. Akin to this consistently reported phenomenon is that self-compassion displays an inverse relationship with anxiety. The below passages encapsulate an elucidation of these constructs and forwards the evidence which prior research in the area has disclosed regarding their connection to anxiety as well as pathological worry. In addition, maladaptive perfectionism and self-compassion's unique relationship with each other is also specified. The statistical significance shared between these named constructs is further investigated, whereby research which intentionally and inadvertently suggests that self-compassion possesses the potential to mediate the link between maladaptive perfectionism and anxiety/worry is explored. Lastly, worry and its ability to maintain the connection between self-compassion and anxiety, and maladaptive perfectionism and anxiety, is outlined.

Perfectionism

Perfectionism is a construct within the literature which lacks a universally applied definition (Inglés, García-Fernández, Vicent, González, & Sanmartín, 2016). The construct's inherent complexity has impeded the procurement of a unified conceptualisation that is invariably putative (Stairs, Smith, Zapolski, Combs, & Settles, 2012), therefore multiple standpoints exist within the literature. However, it is prevalently depicted as the pursuit of attaining impractically ambitious goals, holding excessive high-performance standards, while simultaneously being overly critical regarding one's self-evaluations (e.g. Frost, Marten, Lahart, & Rosenblate, 1990; Frost, Lahart, & Rosenblate, 1991; Hewitt, Mittelstaedt, & Wollert, 1989).

Perfectionism is generally conceptualised as being comprised of two distinguishable facets; an adaptive form and a maladaptive form (Levinson et al., 2015). The division of perfectionism into two distinct components stems from the prefatory argument put forth by Hamachek (1978) who suggested that a distinction between “normal perfectionists” and “neurotic perfectionists” could be drawn (p. 27). Whereby, normal perfectionism incorporates an adherence to realistic goals and derives satisfaction subsequently to meeting these set targets, neurotic perfectionism maintains a fixation on excessively high-standards which are commonly objectively unattainable (Guignard, Jacquet, & Lubart, 2012). While adaptive perfectionism has been labelled as the “achievement striving” type, maladaptive perfectionism has been denoted as the “excessive evaluative concerns” type (Enns, Cox, Sareen, & Freeman, 2001). Acknowledging the distinction between achievement striving perfectionism and excessive evaluative concerns perfectionism is crucial, as each form shares a unique and distinguishable relationship with psychological processes and succeeding outcomes (Madigan, Stoeber, Forsdyke, Dayson, & Passfield, 2018). The self-same authors also categorized said relationships, whereby assigning achievement striving to positive processes, evaluative concerns are considered as negative processes (Madigan, Stoeber, Forsdyke, Dayson, & Passfield, 2018).

While adaptive perfectionism may not be detrimental to an individual’s health, maladaptive perfectionism can be considered harmful. Adaptive perfectionism has been found to positively influence life-satisfaction, academic achievement/adaptation, positive affect and self-esteem (Chang, Watkins, & Banks, 2004; Elion, Wang, Slaney, & French, 2012; Stoeber, & Otto, 2006). In addition, Stoeber and Otto (2006) list the beneficial properties of the adaptive form of perfectionism rather than its maladaptive counterpart, conveying that it is significantly associated to lower levels of depression, anxiety, maladaptive coping styles, somatic complaints and various other negative psychological

symptoms. Maladaptive perfectionism however, has been shown to be negative in nature as it is related to increased levels in psychopathology such as depression, anxiety, obsessive-compulsive disorder (OCD), bulimia nervosa and anorexia nervosa (Bastiani, Rao, Weltzin, & Kaye, 1995; DiBartolo, Li, & Frost, 2008; Gnilka, Ashby & Noble, 2012; Yahghoubi & Mohammadzadeh, 2015; Vohs, Bardone, Joiner Jr, & Abramson, 1999). Furthermore, maladaptive perfectionism pervades across a multitude of anxiety disorders including social anxiety disorder, panic disorder, post-traumatic stress disorder, generalised anxiety disorder and pathological worry (Egan, Hattaway, & Kane, 2014; Handley, Egan, Kane & Rees, 2014; Levinson et al., 2015; Wheeler, Blankstein, Antony, McCabe, & Bieling 2011).

Maladaptive Perfectionism and Anxiety in College Students

As the college student population is often subjected to elevated levels of stress brought about through their workload and studies, worrisome thoughts, which induce anxiety, damage self-confidence and facilitate feelings of inadequacy, symptoms are not uncommon (Yu, Chae, & Chang, 2016). Considering this notion and maladaptive perfectionism's reliance on negative psychological processing, it is plausible as to why a massive amount of research dedicated to the analysis of maladaptive perfectionism has been focused on college students. Within the literature, perfectionism is widely renowned for its relationship with a large variety of psychological disorders (including anxiety and worry) (Egan, Wade & Shafran, 2011), and the association between psychological distress and maladaptive perfectionism in college students is well established (e.g. Dunkley & Blankstein, 2000; Park, Heppner & Lee, 2010; Wei, Mallinckrodt, Russell & Abraham, 2004).

Handley, Egan, Kane and Rees (2014) reported a relationship between maladaptive perfectionism, pathological worry and generalised anxiety disorder (GAD) in a sample of undergraduate students. The results indicating that maladaptive perfectionism was associated

with elevated levels of pathological worry and GAD. Interestingly, the association between the variables mentioned remained significant after controlling for depression, which is consistent with Guignard, Jacquet and Lubart (2012) who suggested that anxiety can be independent of depression in its relationship with maladaptive perfectionism. Similarly, in relation to the social aspect of anxiety, Levinson et al. (2015) found that maladaptive components of perfectionism in a sample of undergraduate students were related anxiety. Specifically, higher levels of maladaptive perfectionism were shown to be a strong predictor of heightened anxiety. Seeliger and Harendza (2017) reiterate that maladaptive perfectionism is a sizable predictor of anxiety in undergraduate students. The authors' endnote implies that this association may be a major contributor to academic failure in the college setting. Withal, it has been reported that perfectionism in college students over the last three decades has been cross-culturally ever increasing (Curran & Hill, 2017), which portrays maladaptive perfectionism as a prolonged epidemic requiring effectual countermeasures.

A recommendation made specifically by Handley, Egan, Kane and Rees (2014) demonstrates the necessity for future research to investigate whether interventions can alleviate symptoms of anxiety whilst addressing maladaptive perfectionism. However, for interventions to be effective it is essential that they be built upon an explicit theory of both nature and causes of the psychopathology (Hulme, Snowling, Caravolas & Carroll, 2005). Therefore, an in-depth knowledge of the aetiology and essence of psychopathology being addressed is imperative for interventions to succeed. Unfortunately, despite the extensive existing research devoted to maladaptive perfectionism, evidence of effective treatments in relation to perfectionism have not been widely reported (Kearns, Forbes & Gardiner, 2007), and perfectionism has even been found to hinder the therapeutic approach of cognitive behavioural therapy (CBT; Jacobs et al., 2009; Lundh & Öst, 2001; Tyler, 2016). Likewise, psychoanalysts have also reported similar hindrances regarding aspects of maladaptive

perfectionism such as self-criticism on treatment outcomes (Scharff & Tsigounis, 2003). Egan, Wade and Shafran, (2011) suggest that because perfectionism is considered a transdiagnostic process, it is not unusual that research has discovered that maladaptive perfectionism impedes certain individuals in their ability to interact with conventional treatment protocols successfully. In respect to this drawback, the identification of mechanisms or processes through which treatment outcomes are affected by maladaptive perfectionism warrant discovery (Blatt & Zuroff, 2002)

Practical Relevance of Identifying Mediators for Intervention Programmes

In correspondence to Blatt and Zuroff's (2002) suggestion, interventions in the domain of treatment and prevention research target mediating variables which theoretically impact outcome variables, this being the fundamental basis of the therapeutic approach (MacKinnon, Fairchild & Fritz, 2007). Mediation analysis offers more than whether an intervention is effective as it delves further into the components of interventions, such that it determines the factors that account for the interventions' effectiveness (Hulme et al., 2012). Therefore, the identification of variables which mediate the relationship between maladaptive perfectionism and anxiety may contribute to the development of new and improved interventions and provide real-world implications via their implementation.

Known Mediators between Maladaptive Perfectionism and Anxiety

Relatively recent research has been conducted which focuses on what mediates the connection between maladaptive perfectionism and anxiety, which grants insight into how maladaptive perfectionism generates psychopathological outcomes. Baron and Kenny (1986) characterise a mediating variable as "*the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest*" (p. 1173). Utilising mediation analysis, variables such as negative automatic thoughts, anxiety

sensitivity and avoidant coping were found to mediate the relationship between maladaptive perfectionism and symptoms of anxiety in undergraduate college students (Pirbaglou et al., 2013; Weiner & Carton, 2012). Similarly, in relation to worry, experiential avoidance produced a mediating effect between maladaptive perfectionism and worry in a sample of undergraduate students (Santanello & Gardner, 2007). Furthermore, self-criticism is another construct within the literature that has also presented itself as a mediator between maladaptive perfectionism and psychological distress in multiple student populations (James, Verplanken & Rimes, 2015). Distress, in this instance, was comprised of depression, anxiety and stress. In summary, past research has disclosed that negative automatic thoughts, anxiety sensitivity, avoidant coping/experiential avoidance and self-criticism are all variables that function as mediators between maladaptive perfectionism and anxiety.

Moreover, with relevance to the current paper, the role of self-compassion has been unveiled as a mediator between maladaptive perfectionism and psychological distress in sample of international students (Seo, 2012). Likewise, Mehr and Adams (2016) reflected that college student levels of maladaptive perfectionism and depression were partially mediated following the inclusion of self-compassion as a mediator into their statistical analysis.

Self-Compassion

“Being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical; perceiving one’s experiences as part of the larger human experience rather than seeing them as isolating; and holding painful thoughts and feelings in mindful awareness rather than over-identifying with them” (Neff, 2003b, p. 223).

Self-compassion is comprised of three central features: self-kindness, common humanity and mindfulness (Neff, 2003a), which slot into its above definition respectively.

Neff (2003b) conveys (1) that self-kindness “lessens” the hold of negative emotions by relieving the pressurizing effects of self-judgment; (2) that common humanity “lessens” self-judgement through the realisation that everyone is not flawless and are susceptible to undergoing suffering and feelings of inadequacy; (3) that mindfulness “lessens” self-judgment by enhancing a mentality of acceptance and detachment. Self-compassion also incorporates a further three components which are the counterparts to the initial three (i.e. self-judgment, isolation and over-identification) (Neff, 2003b).

Contemporary research has witnessed an upsurge in the interest into self-compassion and its relative underlying beneficial properties (López, Sanderman, Ranchor & Schroevers, 2018). Self-compassion is said to be positively associated with many psychologically healthy processes such as positive affect and wellbeing, and negatively associated with the more destructive aspects including negative affect and psychological disorders (Arimitsu & Hofmann, 2015). Furthermore, self-compassion shares a negative relationship with both neuroticism/maladaptive perfectionism (Kirkpatrick, 2005; Neff, Rude & Kirkpatrick, 2007) and anxiety (Barnard & Curry, 2011), indicating self-compassion’s properties as a countermeasure against maladaptive perfectionism and anxiety disorders are to be expected.

Self-Compassion’s Relationship with known Mediators between Maladaptive Perfectionism and Anxiety

Self-compassion has been found to be significantly associated with all the mediating variables between maladaptive perfectionism and anxiety/worry previously mentioned. The association self-compassion shares with the multiple reported mediators between maladaptive perfectionism and anxiety/worry is unintentionally suggestive that self-compassion will thereupon produce a converse mediating effect. Self-compassion has been found to counter the effects of negative automatic thoughts (Mantzios, Wilson, Linnell, & Morris, 2015) and display a negative association with avoidant-coping, experiential avoidance strategies, and

anxiety sensitivity (Hoge et al., 2013; Neff, Hsieh, & Dejjterat, 2005; Thompson & Waltz, 2008). In contrast to self-criticism, a core component of self-compassion is that the individual does not extensively criticize one's self for falling short of their set exemplary standards (Neff, 2003a). Therefore, it is not remarkable that findings propose that self-compassion partakes in the undermining of self-criticism (e.g. Fanning & McKay, 2005; Neff, 2003b).

Moreover, the fact that self-compassion's mediating role has been addressed in the past by Seo (2012) and Mehr and Adams (2016) reflects evidence of prior groundwork supporting self-compassion's mediating potential between maladaptive perfectionism and anxiety. Given that worry is conceptualised as being integral with anxiety disorders such as generalised anxiety disorder (GAD) and social anxiety (Yook, Kim, Suh, & Lee, 2010), this educated inference also encompasses worry.

Self-Compassion and Anxiety

A consistent finding across empirical research exploring the connection between self-compassion and anxiety is that self-compassion is associated with lower levels of anxiety (MacBeth, & Gumley, 2012). Self-compassion has been extensively researched in its relationship with anxiety (e.g. Hoge et al., 2013; Muris, Meesters, Pierik, & de Kock, 2016; Werner et al., 2012) reflecting that higher levels of self-compassion result in lower levels of anxious symptomatology. An inference drawn by MacBeth and Gumley's (2012) meta-analytic research is that self-compassion plays a noticeable role in the development of wellbeing, the diminishment of anxiety, and the enhancement of resilience in stressful contexts. Withal, it is evident that self-compassion displays anxiolytic properties as the construct demonstrates its capability to intercept the manifestation of psychopathology.

Implications of this negative relationship between self-compassion and anxiety are observable through the successful practice of mindfulness-based interventions (MBIs).

Hofmann, Sawyer, Witt and Oh (2010) have established the effectiveness of MBIs in the alleviation of anxiety symptoms through their meta-analytic research. The relevance of these findings to self-compassion however, is that many of the practical and theoretical constituents of MBIs are said to related to self-compassion, and interestingly, self-compassion overlaps mindfulness in its ability to predict anxiety and worry (particularly the subcomponents self-judgment and isolation; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). This in conjunction with the findings that lower levels in self-compassion are a strong predictor of anxiety and worry (i.e. Hoge et al., 2013), exhibits that self-compassion's relevance to the practice of MBIs is undeniable.

Self-Compassion and Maladaptive Perfectionism

Given the nature of self-compassion in comparison to maladaptive perfectionism, it is palpable as to why these constructs conflict each other. Therefore, it is not surprising that research has found the two contradictory constructs to be negatively associated to one another (Kirkpatrick, 2005). For example, individuals who are more self-compassionate respond to failure with self-kindness, recognise that failure is an obstacle which everyone experiences, and remain mindful in the face of negative emotions (Neff, Hsieh & Dejitterat, 2005). In addition, they also manage to perceive failure as an opportunity to learn and grow, instead of becoming overwhelmed with negative emotions in response to an undesired performance (Neff, Hsieh & Dejitterat, 2005). Self-compassion is also not dependent on performance evaluations (Neff, 2003b) which is not a feature shared with maladaptive perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990). Most noticeably, being self-compassionate is the act of not overly criticising one's self for being imperfect (Neff, 2011), a quality which is again lacking in maladaptive perfectionism (Frost, Marten, Lahart & Rosenblate, 1990). Correspondingly, the reality that self-criticism is strongly associated with self-judgment (Zuroff, Igreja & Mongrain, 1990) is to be expected as the two are used almost

synonymously in literature. Taking this relationship into account, it is logical to surmise that maladaptive perfectionism induces self-criticism where self-compassion mitigates self-judgment.

Self-Compassion and Maladaptive Perfectionism within the Therapeutic Setting

Although research has relayed that interventions are lacking in the domain of treatment for perfectionism (Kearns, Forbes & Gardiner, 2007), and that perfectionism may render traditional therapies inadequate in successfully treating certain psychopathologies (Egan, Wade & Shafran, 2011; Jacobs et al., 2009; Lundh & Öst, 2001, Scharff & Tsigounis, 2003, Tyler, 2016), others have found CBT to be an effective method to utilise concerning the alleviation of maladaptive perfectionistic traits (e.g. Steele et al., 2013), and appears to be the most commonly utilised form of treatment in the reduction of maladaptive perfectionism. For example, Riley, Lee, Cooper, Fairburn, Shafran (2007) found, using a randomised control trial, that CBT was effective for treating maladaptive perfectionism for approximately seventy-five percent of individuals engaging in this therapeutic approach. However, the observation that numerous individuals who undergo therapy perform poorly in treatment even after acquiring the useful tools and becoming skilled in subsiding their negative emotions (e.g. Rector, Bagby, Segal, Joffe & Levitt, 2000) was a causal factor generating the development of a therapy centred around compassion (Gilbert, 2009).

In respect to this dilemma, compassionate focused therapy (CFT) has arisen from the cognitive behavioural tradition of treatment (Gilbert, 2010). Gilbert (2009) portrays that CFT recognises that elevated levels of shame and self-criticism hamper feelings of contentment, notwithstanding having undergone previous treatment. In addressing this issue, CFT seeks to reduce levels of shame and self-criticism through promoting positive affect which prompts the individual into adopting responsibility, and learning to cope with their symptoms,

thoughts and feelings (Gilbert, 2009). CFT's mind training is interested in identifying how an individual reacts to failure, and in respect to this, it aims to aid its clients in focusing on their efforts rather than their results (Gilbert, 2009). Withal, CFT has been reported to be effective in reducing levels of self-criticism alongside psychopathology in a transdiagnostic population (Cuppige, Baird, Gibson, Booth & Hevey, 2017). Although, to establish whether self-compassion is the "active component" resulting in rehabilitation and the additional advantages that self-compassion may potentially contribute to traditional counselling practices and therapeutic strategies requires supplementary research (Leaviss & Uttley, 2015, p. 942).

Self-Compassion, Anxiety and Perfectionism

Campbell (2017) published findings which clarifies that maladaptive perfectionism, self-compassion and anxiety are each interconnected with one another. Singularly, they reported that; self-compassion and maladaptive perfectionism have been found to produce a significant negative relationship; maladaptive perfectionism was shown to positively predict scores of psychological distress (i.e. depression and anxiety); lastly, reported that self-compassion was a strong negative predictor of psychological distress. This research neatly ties the three variables together, highlighting that there is a significant amount of statistical relevance between them.

As previously described, it is patent as to why perfectionism and the construct's relationship with anxiety has been studied predominantly within the university student population. This rational prevalence of focusing on college students however, can be applied to self-compassion in much the same way. College students tend to engage in a mentality of being tough on themselves in the instances of perceived failure or when not having reached desired or ideal goals (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). However, self-

compassion is said to impede the formation of negative emotions which emerge via problematic situations such as failure (Leary et al., 2007). In accordance to this idea, Smeets, Neff, Alberts and Peters (2014) convey that introducing self-compassion into the college setting can be beneficial due to its potential to aid students in the promotion of their resilience and wellbeing. It has also been suggested that self-compassion be promoted and cultivated in the education system to succour first year college students in beginning their transition into a college setting (Gunnell, Mosewich, McEwen, Eklund, & Crocker, 2017).

The Influence of Worry on Self-Compassion and Maladaptive Perfectionism's Relationship with Anxiety

Worry is a principle cognitive component of anxiety depicted as '*a chain of thoughts and images, negatively affect-laden and relatively uncontrollable*' (Borkovec, Robinson, Pruzinsky, & DePree, 1983, p. 10). This paper addresses both anxiety and worry, therefore it is essential to understand what the construct of worry entails. Worry is concerned with fixations representing future events where outcomes are unknown, but said outcomes possess the malignant potential to result in negative experiences as perceived by the individual (Sibrava & Borkovec, 2006). Worry is typically featured in generalised anxiety disorder, characterised by an uncontrollable worry across many different themes and issues (Hirsch & Mathews, 2012). Previous research has linked maladaptive perfectionism and self-compassion to worry, indicating that they are significantly associated with each other (e.g. Raes, 2010; Santanello & Gardner, 2007; Stöber & Joormann, 2001).

Interestingly, Stöber and Joormann, (2001) proclaim that it is worry that links anxiety to maladaptive perfectionism. The authors arrived at this conclusion as the significant correlation between anxiety and maladaptive perfectionism attenuated once worry was controlled for. They deduced from this that if the cognitive components of anxiety are not present (i.e. worry), the remaining components of anxiety (i.e. somatic facets) are not

significantly related to maladaptive perfectionism. Dugas, Francis and Bouchard (2009) found (contradicting their proposed hypothesis) that alterations in worry did not predict changes in somatic anxiety, suggesting that the two are independent from each other. This signifies that somatic and cognitive anxiety should be analysed separately as they appear to be separate constructs. Combining this argument with Raes (2010), who reported that worry mediates the link between self-compassion and anxiety, in a sample of undergraduates, worry appears to play a fundamental role in the connection between self-compassion and anxiety as well as maladaptive perfectionism and anxiety.

Rationale for the Current Study

Research verifying that self-compassion mediates the link between maladaptive perfectionism and anxiety in isolation (anxiety independent of confounding effects of depression), to the best of this researcher's knowledge, is non-existent. However, upon the review of the compiled evidence presented, it is possible to interpret that an underlying relationship exists. It is evident from prior investigation that the primary variables in question are of interest in contemporary research and it is justifiable to assume that maladaptive perfectionism and self-compassion are relevant variables to analyse when referring to anxiety and pathological worry.

A substantial amount of research suggests that these constructs are heavily influenced by one another, and it has been argued that anxiety and depression can have independent relationships regarding maladaptive perfectionism (Guignard, Jacquet & Lubart, 2012; Handley, Egan, Kane & Rees, 2014). Similarly, worry has demonstrated its value as cognitive construct in differentiating individuals suffering from anxiety disorders from those suffering from depressive disorders (Yang et al., 2014). This is supported by Merino, Senra and Ferreiro (2016) who reported that there is no statistical relevance shared between worry and

individuals diagnosed with major depressive disorder (MDD), where there was an existing link between worry and generalised anxiety disorder (GAD). Therefore, it is apparent that worry may be a chief construct in the division of anxiety and depression.

Consequent to a review of the literature, it is possible to surmise that the urgency of tackling maladaptive perfectionism's grasp on individuals which results in unwarranted anxiety, rests upon the identification of mediating variables that bear the potential to mitigate this relationship. As Handley, Egan, Kane and Rees (2014) advocated the importance of interventions which curtail levels of anxiety in the presence of maladaptive perfectionism, a further exploitation of the variables in question may contribute to the development and implications of interventions. Subsequently, this may bolster the efficacy and the effectiveness of interventions in providing support for college students struggling with distressing levels of perfectionism, anxiety and pathological worry. As self-compassion converts negative affect to positive affect (Neff, 2003b), it may act as an outlet for breaking from the traditional position of therapeutic approaches where current interventions are focused primarily on mitigating negative affect rather than rehabilitating positive affect (Pizzagalli, 2016). Moreover, it has been distinctly relayed that self-compassion and its therapeutic properties requires further analysis (Leaviss & Uttley, 2015).

Aims and Hypotheses

Using similar methodologies to Seo (2012) and Mehr and Adams (2016) (mediation analysis), the current research aims to investigate whether self-compassion will mediate the link between maladaptive perfectionism and anxiety/worry in college students. In doing so, the target is to isolate anxiety (specifically from depression). Therefore, the Beck Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988) was utilised as it was established as a tool to differentiate anxiety from depression. However, the BAI has been criticised for its over-

emphasis on somatic symptoms of anxiety and its lack of acknowledgment for cognitive components of anxiety (i.e. worry; Julian, 2011). Taking this into account, the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) is implemented alongside the BAI.

Secondly, the current study seeks to build on the findings of Stöber and Joormann, (2001), which distinguished between somatic and cognitive anxiety using similar measures and seeks to assess their claim that somatic anxiety is unrelated to perfectionism, where cognitive anxiety is. The secondary aim therefore is to investigate whether self-compassion would mediate the link between maladaptive perfectionism and both somatic (measured by the BAI) and cognitive anxiety (measured by the PSWQ) symptoms, which will provide feedback on how central the construct of worry is in this relationship.

Withal, the current paper assesses two primary hypotheses. The first, that self-compassion mediates the connection between maladaptive perfectionism and anxiety. The second, a two-part hypothesis, that self-compassion mediates the link between maladaptive perfectionism and cognitive anxiety (worry) and that self-compassion does not mediate the link between maladaptive perfectionism and somatic anxiety.

Methods

Participants

The data from the current study was collected by applying an online self-selecting sampling method utilised to obtain a sum of college students ($n = 79$). The inclusion of participatory input was dependant on whether the participants were currently enrolled in third level education. Subsequently, two participants did not meet this criterion and were excluded from the dataset. Participants who identified themselves as female ($n = 55$) outweighed those who identified themselves as male ($n = 24$). The average age of participants was 22 years ($SD = 3.27$), where age ranged from 18 years to 46 years. Participants specified whether they were completing an Advanced Certificate (1%), a Higher Certificate (1%), an Ordinary Bachelor's Degree (6%), an Honours Bachelor's Degree (81%), a Postgraduate Degree (9%), or a Doctorate (1%). Participants also named the source of funding for their tuition fees which were Personal Expense (19%), Family and/or Friends (47%), a Grant or Scholarship (19%), or combination of two or more (i.e. Personal Expense and Family and/or friends (10%), Personal Expense and a Grant or scholarship (4%), or Family and/or Friends and a Grant or Scholarship (1%)). Ethnic diversity within the sample was Irish (87%), other white background (8%), African (1%), Chinese (3%), and other Asian background (1%). The participants took part in the study to accommodate the execution of a final year project where no incentive was provided, and all participants were issued a series of identical questionnaires.

Materials

The Self-Compassion Scale (SCS) - The SCS (Neff, 2003b) is a 26-item scale which incorporates six subscales measuring elements of global compassion (Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification). The scale's items are measured along a 5-point Likert scale (i.e. 1 = Almost Never to 5 = Almost

Always) which indicate how often participants act towards themselves in the stated manner during times of hardship and suffering. The negative sub-scales are reversed scored (i.e. Self-Judgment, Isolation, and Over-Identification), and upon completion item scores are totalled to reveal a global self-compassion score where higher scores are indicative of higher self-compassion. The SCS has been reported to have acceptable convergent validity (e.g. positive correlations with emotional intelligence (e.g. .43 and .55)) and discriminant validity (e.g. a negative correlation with self-criticism (-.65); Neff, 2003b). The SCS's external reliability (test-retest) was reported by Neff (2003b) as being .93. Neff (2003b) also stated that the internal consistency of the SCS was .92 and Mehr and Adams (2016) reported it to be .91. The Cronbach's alpha for the current study was .94.

The Almost Perfect Scale – Revised (APS-R) - The APS-R is a 23-item scale measuring the multidimensional construct of perfectionism (Standards, Order and Discrepancy; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Personal standards are measured by the Standards subscale, organisation and the exigency for order is measured by the Order subscale, and distress evoked via perceived disparity between performance and idealised standards is measured by the Discrepancy subscale. Individuals completing the APS-R report their level of agreement using a 7-point Likert scale from Strongly Disagree (1) to Strongly Agree (7). Scores from each subscale are totalled, where generated higher scores denote greater levels perfectionism in respective dimensions. Construct validity of the discrepancy subscale has been verified as Slaney, Rice, Mobley, Trippi & Ashby (2001) reported strong correlations with other measures of maladaptive perfectionism (e.g. Doubts About Actions (.62) and Concern Over Mistakes (.55)). An internal consistency of .92 to .93 for the discrepancy subscale has been demonstrated utilising college student samples (Mehr & Adams, 2016; Rice, Vergara & Aldea, 2006). For the current study, only Discrepancy

scores which measure maladaptive perfectionism were considered, where the Cronbach's alpha was .94.

The Penn State Worry Questionnaire (PSWQ) - The PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990) is a commonly utilised questionnaire in the measurement of pathological worry, where higher scores are representative of a greater amount of worry. The PSWQ is a 16-item measure that has been structured around statements made by individuals diagnosed with GAD. The items of the PSWQ are rated on a 5-point Likert scale for 1 (not at all typical of me) to 5 (very typical of me). The PSWQ has been reported to display exceptional test-retest reliability, validity and internal consistency (Meyer, Miller, Metzger, & Borkovec, 1990). The measures Cronbach's alpha ranges from .88 (n = 36) to .91 (n = 42) (Handley, Egan, Kane & Rees, 2014). The Cronbach's alpha for the current study was .94.

The Beck Anxiety Inventory (BAI) - The BAI designed by Beck, Epstein, Brown and Steer (1988) is a 21-item measure of anxiety with an emphasis on somatic symptoms of anxiety that was developed as a measure to distinguish anxiety from depression. The BAI is a self-report measure which assesses symptoms such as hands trembling, numbness or tingling, hot/cold sweats, etc. Participants report how much they have been bothered by each symptom over the past week-to-month period. Responses are recorded along a 4-point Likert scale that ranges from 0 (not at all) to 4 (severely). A total score is summed from the responses upon completion which indicates a participant's overall level of anxiety (i.e. higher scores signify more pronounced levels of anxiety). The BAI shows satisfactory construct validity when compared with other measures of anxiety including Hamilton Anxiety Rating Scale (.51; Beck & Steer, 1991). The self-report measures Cronbach's alpha indicates a high internal consistency of .94 (Fydrich, Dowdall & Chambless, 1992). According to Beck, Epstein, Brown and Steer (1988), twelve items specifically measure somatic anxiety. Therefore, the current study discarded the remaining cognitive items from the scale for the purposes of

addressing the at hand secondary hypothesis. The Cronbach's alpha for the current study was .91.

Design

The current study utilised an observational (cross-sectional) approach in the collection of its data and was quantitative regarding the analysis of this data. The primary objective of the study was administering a mediation analysis which meant the primary variables in question were separated into: *the independent, the mediating* and the *dependant variables*. The independent variable being maladaptive perfectionism, the mediating variable being self-compassion and the dependent variables being anxiety and worry. In addition, a set of 5 demographic variables were obtained to convey the nature and distribution of the participants in relation to each other and their collected data. The variables included were sex, age, level in tertiary education, funding source for tuition fees, and ethnicity.

Procedure

Ethical approval for the study was granted by the ethics board of the National College of Ireland (NCI). As there were no queries regarding the current study's proposal, online questionnaires were sent out via forms of social media to be undertaken anonymously by any college student who decided to take part. Prior to being directed to the questionnaires, respondents were required to confirm that they had read the information sheet and informed consent form. It was mandatory for participants to convey their consent if they wished to proceed further. Thereafter (providing they accepted the terms), the participants were presented with the SCS, the APS-R, the PSWQ and the BAI in that order, which they were prompted to fill out as accurately as possible. Towards the end of participation, the study's participants were presented with several questions about their demographic information. Finally, once previous requirements, questionnaires and demographic information had been

completed, the participants submitted their individual responses which were then sent to this researcher conducting the investigation.

After a sufficient number of participants had been recruited, the recruitment process was terminated. Thereafter, the data was transferred to a document where it could undergo statistical analysis. Descriptive and inferential statistics were then produced using this recorded data.

Results

Descriptive

Frequency statistics produced from demographics variables (i.e. categorical) are presented in **table 1**. Thereafter, **table 2** is representative of the current study's primary variables and participant ages (i.e. continuous variables), displaying measures of central tendency, variance and reliability. The Kolmogorov-Smirnov test indicated that 2 of the 4 primary variables were non-normally distributed (SCS = .01; APS-R = .06; PSWQ = .02; BAI = .18). Therefore, preliminary correlations utilising Spearman's rho are presented in **table 3**. A series of multiple regressions were run to detect if there were any confounding effects caused by demographic variables on the primary variables. Results showed that there was a significant association between age and APS-R scores ($p = .03$), and between sex and BAI scores ($p = .007$). To control for their confounding effects, age and sex were included into each of the following regression models.

Table 1.

Frequencies and valid percentages of demographic variables (n = 79)

Variable	Frequency	Valid Percentage
Sex		
Male	25	31.6
Female	54	68.4
College Level		
Advanced Certificate	1	1.3
Higher Certificate	1	1.3
Ordinary Bachelor	5	6.3
Honours Bachelor	64	81
Postgraduate	7	8.9
Doctorate	1	1.3
Ethnicity		
White	69	87.3
Other White	6	7.6
African	1	1.3
Chinese	2	2.5
Other Asian	1	1.3
Tuition Fees		
Personal Expense	15	19
Family/Friends	37	46.8
Grant or Scholarship	15	19
PE and FF	8	3.8
PE and GS	3	10.1
FF and GS	1	1.3

Table 2

Descriptive statistics and reliability of all continuous variables

	Mean (95% confidence intervals)	Median	Standard Deviation	Range	Cronbach's Alpha
Age	22	22	3.27	18 - 46	
SCS	70.16 (66.10 – 74.23)	68	18.14	26 - 118	.94
APS-R	54.41 (50.86 – 57.95)	57	15.81	12 - 83	.94
PSWQ	59.66 (56.52 – 62.80)	63	14.03	29 - 80	.94
BAI	14.01 (11.98 – 16.04)	14	9.06	0 - 32	.91

Table 3

Correlations between all continuous variables (Spearman's rho)

Variables	1	2	3	4
1. SCS				
2. APS-R	-.59**			
3. PSWQ	-.72**	.64**		
4. BAI	-.42**	.40**	.53**	

Note. Statistical significance: *p < .05; **p < .01; ***p < .001

Mediation analysis

Utilising the causal steps approach to mediation (Baron & Kenny, 1986) through several multiple regression analyses, the current study conducted 2 mediation analyses. The first mediation was structured with SCS as the mediator variable between APS-R (independent) and PSWQ (dependent). The second mediation incorporated BAI scores as the outcome variable, replacing PSWQ scores. Assumptions of normality, linearity, homoscedasticity and independence of residuals were considered. Upon evaluation of the normal probability plot (P-P) and the scatterplot resulting from each of the regression analyses, assumptions were deemed satisfactory and did not require further action to be taken. Steps 1 – 3 clarified that significant associations were present which was necessary to proceed onto step 4 which would output whether a mediating effect of SCS existed.

Mediation 1

Step 1: A regression analysis generated a significant output regarding the APS-R as a predictor variable and the PSWQ as a criterion variable ($\beta = .60, p < .001$).

Step 2: A regression analysis generated a significant output regarding the APS-R as a predictor variable and the SCS as a criterion variable ($\beta = -.67, p < .001$).

Step 3: A Regression analysis generated a significant output regarding the SCS as a predictor variable and the PSWQ as a criterion variable ($\beta = -.69, p < .001$).

Step 4: A regression analysis comprising of the APS-R and the SCS as predictor variables, and the PSWQ as the criterion variable indicated that the SCS remained significant after controlling for the APS-R ($p < .001$). In addition, the APS-R remained significant after controlling for SCS ($p = .03$). According to Baron and Kenny (1986), this signifies a partial mediation effect.

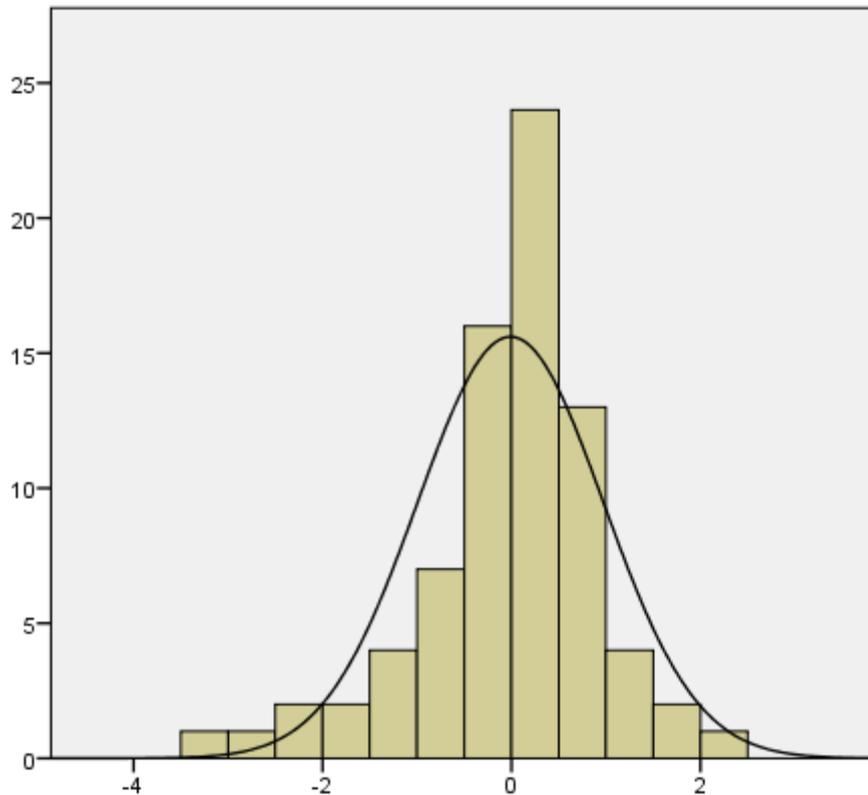


Figure 1. Mediation 1 step 4 regression residuals

Mediation 2

Step 1: Regression analysis generated a significant output regarding the APS-R as a predictor variable and the BAI as a criterion variable ($\beta = .39, p < .001$).

Step 2: Regression analysis generated a significant output regarding the APS-R as a predictor variable and the SCS as a criterion variable ($\beta = -.67, p < .001$).

Step 3: Regression analysis generated a significant output regarding the SCS as a predictor variable and the BAI as a criterion variable ($\beta = -.45, p < .001$).

Step 4: Regression analysis comprising of APS-R and SCS as predictor variables and BAI as the criterion variable indicated that SCS remained significant after controlling for APS-R ($p = .01$). In addition, APS-R was no longer significant after controlling for SCS ($p = .23$). According to Baron and Kenny (1986), this signifies a full mediation effect.

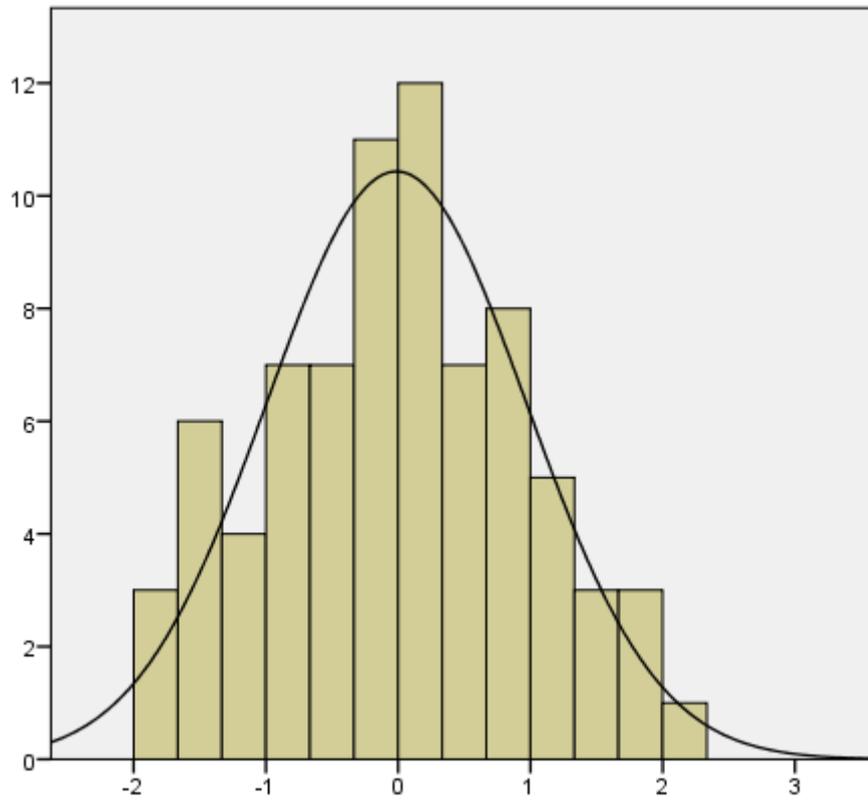


Figure 2. Mediation 2 step 4 regression residuals

Discussion

The primary objective of the current study is to investigate whether self-compassion acts as a mediating variable between maladaptive perfectionism and anxiety in college students. Prerequisite correlations were run before proceeding on to the mediation analyses, whose purpose was to establish statistical significance between the primary variables in question. From these several correlations, maladaptive perfectionism is shown to be moderately correlated with anxiety ($r = .4$) and strongly correlated with pathological worry ($r = .6$). Contrarily, self-compassion produced moderate negative correlation with anxiety ($r = -.4$) and a strong negative correlation with pathological worry ($r = -.7$). Finally, a strong negative correlation ($r = -.6$) outlines the relationship between self-compassion and maladaptive perfectionism. These preliminary correlations indicate that scoring low in self-compassion is accompanied by higher scores in measures of maladaptive perfectionism and anxiety/pathological worry. In relation to anxiety, this pattern of scoring is pre-eminent regarding scores of pathological worry compared to anxiety measured by somatic symptoms. The basic correlations therefore imply that worry appears to be more so intrinsically intertwined with maladaptive perfectionism and self-compassion, surpassing the relationship that somatic anxiety has with these named variables. Underpinning the working rationale of this investigation, the correlations posit that maladaptive perfectionism, self-compassion, anxiety and pathological worry are all relevant variables to dissect in relation to each other.

It is hypothesised that maladaptive perfectionism influences self-compassion which thereafter influences anxiety. Fundamentally, the primary objective was to expose a potential mechanism (i.e. self-compassion) underling the connection between maladaptive perfectionism and anxiety. Findings support the proposed hypothesis in that self-compassion mediates this maladaptive perfectionism-anxiety association. Two mediation models are presented to address the current investigation's secondary hypothesis, that self-compassion

mediates the relationship between maladaptive perfectionism and cognitive anxiety, but not somatic anxiety. For the first mediation model the outcome variable is anxiety measured by somatic symptoms. The second model differs as it pertains to levels of pathological worry as a measurement of cognitive anxiety. The first mediation model accounts for somatic anxiety by utilising the somatic items of the BAI, which displays that self-compassion fully mediates the connection between maladaptive perfectionism and anxiety. Whereas, the second mediation model measured anxiety in terms of cognitive anxiety by employing the PSWQ, indicating that self-compassion partially mediates the link between maladaptive perfectionism and anxiety.

However, the BAI outcome model being the full mediation model, and the PSWQ being the partial mediation model was an unexpected discovery as the secondary two-part hypothesis predicted reverse results. As such, it was hypothesised based on the premises of prior research that maladaptive perfectionism and somatic anxiety would not be significantly related, therefore a mediation could not have been conducted. Nevertheless, the data conveys a significant association between the two constructs, ultimately leading to a full mediation despite a weaker relationship than that of maladaptive perfectionism and pathological worry.

These findings are attained via the employment of the causal steps approach to mediation analysis (Baron & Kenny, 1986). Abiding by Baron and Kenny's (1986) four-step instructions, self-compassion is unveiled to fully mediate the link between maladaptive perfectionism and somatic anxiety which is confirmed as after controlling for self-compassion, maladaptive perfectionism is insignificantly associated with BAI scores. However, self-compassion partially mediating the connection between maladaptive perfectionism and worry is a product of maladaptive perfectionism remaining significantly associated to worry after controlling for self-compassion. This implies that self-compassion alone (in relation to worry) is not sufficiently equipped to produce a full mediating effect,

most likely a product of secondary intervening variable(s) which are not identified nor included within the current study's analysis. Ultimately, this grants insight into maladaptive perfectionism and cognitive anxiety's persistent and resilient association. Specifically, self-compassion alone is not enough to "fully" mitigate the connection between maladaptive perfectionism and cognitive anxiety, where it is between maladaptive perfectionism and somatic anxiety, possibly due to the latter's weaker and penetrable connection.

It is possible to interpret these findings as being indicative of self-compassion displaying the properties of a buffering agent against the negative psychological processes of maladaptive perfectionism which may result in symptoms of somatic and cognitive anxiety. Alternatively, the findings suggest that it is possible that maladaptive perfectionism potentially lowers an individual's level of self-compassion (triggering self-judgment, isolation and over-identification) leading to psychopathological consequences such as anxiety.

Consistent with prior research, self-compassion produced a negative association with maladaptive perfectionism (Campbell, 2017; Kirkpatrick, 2005) and anxiety (Hoge et al., 2013; Muris, Meesters, Pierik, & de Kock, 2016; Werner et al., 2012). Likewise, maladaptive perfectionism shared a positive relationship with anxiety which is also consistent with that of past publicised research (Egan, Hattaway, & Kane, 2014; Handley, Egan, Kane & Rees, 2014; Levinson et al., 2015; Wheeler, Blankstein, Antony, McCabe, & Bieling 2011). The mediating effect of self-compassion in the maladaptive perfectionism-psychological distress association in college students is consistent with research conducted by Seo (2012) and Mehr and Adams (2016) as these authors also found that self-compassion mediates the link between maladaptive perfectionism and psychological distress in the college student population. In addition, as the current study reports a full mediation (i.e. mediation 2) as opposed to a partial mediation where depression is replaced as the dependent variable (Mehr

& Adams, 2016), supports the notion that anxiety and depression can differ in their relationships with maladaptive perfectionism (Guignard, Jacquet & Lubart, 2012; Handley, Egan, Kane & Rees, 2014).

The literature suggests that maladaptive perfectionism is not related to anxiety measured by somatic symptoms (Stöber & Joormann, 2001), which is not supported by the results obtained from the current study. The BAI lacks aspects of cognitive anxiety such as worry (Julian, 2011) and is over dependent on the measurement somatic symptoms. Additionally, the BAI was adjusted so that the items measuring cognitive anxiety were removed. Thus, the BAI retained only components measuring somatic anxiety, yet the scale displays a moderate correlation with maladaptive perfectionism within the current study's analyses. This is argumentative toward the notion that somatic anxiety is not an irrelevant variable to analyse in its connection to maladaptive perfectionism as past research has described. However, worry does appear to exert a more prominent association with maladaptive perfectionism, indicating that the two forms of anxiety may indeed be distinct constructs (Dugas, Francis & Bouchard, 2009). Taking this differential connection into account in combination with the mediation analysis, self-compassion appears to be an ample form of defence against panic related symptoms of anxiety which emerge through ramifications of maladaptive perfectionism. To a lesser extent, the same can be said for generalised/future orientated symptoms of anxiety within the same context.

In response to Hulme, Bowyer-Crane, Carroll, Duff and Snowling (2012) who commended mediation analysis for its ability to identify the mechanisms and processes that account for an interventions efficacy and effectiveness, it is possible to label self-compassion as a valuable component worth implementing into prevention and treatment programmes as the mediation highlights its statistical relevance as a mediating variable. Accordingly, the current study identifies self-compassion as a mechanism through which treatment outcomes

could potentially be affected by maladaptive perfectionism. Ergo responding to Blatt and Zuroff (2002) who argued that such processes connecting maladaptive perfectionism and anxiety warrant discovery. These processes or mechanisms are essential considering Hulme, Snowling, Caravolas and Carroll's (2005) interpretation which forwarded that the causes of psychopathologies are important for interventions to function effectively. The produced findings of the mediation analysis are therefore appropriately building upon this logic, suggesting that high levels of maladaptive perfectionism and low levels of self-compassion may give rise to psychopathologies, and that low self-compassion may leave an individual susceptible to the detriments of maladaptive perfectionism. Considering that mediation analysis accounts for the mechanisms by which an intervention is effective, the current study addresses the recommendation made by (Leaviss & Uttley, 2015) who proclaimed that self-compassion be scrutinized further in its applicability to interventions to clarify the benefits of integrating this construct into conventional therapies.

As the literature advocates that identifying mediating variables assist in the establishment of effective treatment and prevention interventions, research findings from the above mediation analyses are potentially beneficial to the growing reputability of the relatively novel and upcoming therapeutic approach known as CFT (Gilbert, 2009). CFT focuses on the harmful repercussions of excessive shame and self-criticism by responding to these negative psychological processes via bolstering positive affective regulation through self-compassion (Gilbert, 2009). The current study's mediation supports this ideology as it is possible to infer that higher levels of maladaptive perfectionism impede the formation of kind and self-supportive mentalities which in turn overstimulate the threat defence system resulting in psychopathology (e.g. anxiety).

Furthermore, the negative correlation between self-compassion and anxiety as well as the mediating potential of self-compassion supplements the existing evidence supporting the

practice of MBIs. Self-compassion has been said to be rooted within the structure of MBIs and additionally has been found to be a more robust predictor of anxiety (Hofmann, Sawyer, Witt & Oh, 2010). It is evident that the current study's findings are compatible with these established and confirmed relationships.

Correlations of the current study reinforce the statement made by Yu, Chae and Chang (2016) who claimed that college students face elevated levels of anxiety, worry and feelings of inadequacy. This surfaces through observation of the summed mean scores outputted from each of the primary variables. For example, the mean scores of pathological worry in the present study meet the averaged total score of individuals suffering from GAD in relation to the PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990). Furthermore, the literature suggests that self-compassion be integrated into the educational environment as a self-supporting cognitive resource (Gunnell, Mosewich, McEwen, Eklund, & Crocker, 2017). Considering self-compassion's and maladaptive perfectionism's negative relationship and self-compassion's association with a reduction in anxiousness, it is apparent that self-compassion is a prospective asset worthwhile integrating into the college setting. The mediation models of the current study uphold the value of this recommendation as it is possible to derive from the findings that promoting self-compassion may act as a protective factor against the sustainment and influence of maladaptive perfectionism which may provoke mental health issues. Moreover, the evidence suggesting that maladaptive perfectionism results in somatic and cognitive anxiety through diminished levels of self-compassion is a deleterious consequence which may be preventable through the application of compassionate mind training and skills. Gilbert (2009) depicts six compassionate skills and six compassionate attributes that an individual can engage in (e.g. compassionate reasoning, compassionate imagery, care for wellbeing, distress tolerance, etc). College counsellors may benefit from fostering and facilitating such skills and attributes in college

students, assisting them in their overall wellbeing and resilience (Smeets, Neff, Alberts & Peters, 2014), as well as in safeguarding them from psychopathologies stemming from maladaptive perfectionism.

Limitations

The current study is not without its limitations which hinder the representative value of the reported findings and restrain inferences that can be subsequently deduced from these findings. Due to the cross-sectional design, mediation analysis cannot derive directionality or causality of the variables included in this analysis which plagues the interpretation of results that can be inferred. Maxwell, Cole, Mitchell (2011) claim that conducting mediation analysis on cross-sectional data is a biased means of testing for mediation. Although mediation is conducted utilising cross-sectional data throughout empirical research, causalities obtained from mediation analysis require the collection of data at different points in time (Maxwell & Cole, 2007). Nevertheless, many researchers conduct mediation with cross-sectional data, however findings should only be considered as preliminary research before committing to a time consuming longitudinal study. In this sense, the current research forms a foundation for future research to build upon.

Furthermore, the causal steps approach (Baron & Kenny, 1986) to conducting mediation analysis has been criticised by researchers suggesting that this approach is somewhat outdated (e.g. Zhao, Lynch Jr & Chen, 2010). A major downfall of this method is that it is lacking in sensitivity to detect some true mediation effects (MacKinnon, Fairchild & Fritz, 2007). Notwithstanding, results of the mediation analyses were more significant than originally anticipated, which begs the question of what a more powerful mediation analysis could achieve. Regarding the assumptions of the regressions, residuals of the PSWQ deviated

from the norm more so than the residuals of the BAI which may have distorted the true mediation effect of the first model.

The data from the current study was collected via self-report measures which are known to be subject to confounding effects such as socially desirability biases (Van de Mortel, 2008). However, not all self-report measures are impeded by such biases. Notably, the SCS has been reported to be resistant to this extraneous effect (Neff, 2003b). Unfortunately, it is unknown to what extent (if at all) social desirability effects scores of the remaining scales utilised within the current study. In relation to the sample itself, demographics were not especially diverse, and the primary variables were not normally distributed. This may have been rectified by the gathering a larger sample size. Thereupon, a collection of more data then may have met the assumptions of regression analysis with more adequacy. Additionally, hindering generalisability, the sample was selected using a self-selecting sampling method and the sample itself consisted of twice the number of females than males.

Future research would benefit from applying longitudinal methodologies when investigating self-compassion as a mediator between maladaptive psychological processes and psychopathologies. This would address (with more precision than the current study) the recommendation of Leaviss and Uttley (2015) who stated that self-compassion be scrutinised to highlight it's psychopathological mitigatory properties and for its applicability into the therapeutic domain. However, the current study utilises a non-clinical sample, which means that findings cannot be directly apt to the clinical setting. In respect to this inconvenience, the longitudinal studies should concern clinical samples. With reference to the clinical setting, CFT is lacking in randomised control trials (RCTs) which have been advocated as imperative for deriving cause-effect relationships (Sibbald & Roland, 1998). Howbeit, CFT would extensively benefit form employing RCTs in future research. Furthermore, CFT could be

compared to MBI's and CBT utilising RCT's in their abilities simultaneously mitigate maladaptive perfectionism (alongside shame and self-criticism) and anxiety, which would indicate the probable advantageous implications of integrating self-compassion into treatment and prevention programmes.

Conclusion

Maladaptive perfectionism possibly inhibits an individual from engaging in self-compassionate thoughts and emotions, rendering the individual susceptible to symptoms of somatic and cognitive anxiety which emerge through negative psychological processing. This contributes to the literature in that self-compassion potentially mitigates the maladaptive perfectionism-anxiety association in college students. However, the inferences are hindered by cross-sectional methodologies, therefore future research will benefit from collecting longitudinal data subsequently deriving causality. Furthermore, the therapy centred around compassion (CFT) is lacking in RCT's, therefore it would be interesting to see how maladaptive perfectionism responds to this therapy within future practices which would contribute to the growing research on this therapeutic approach's validity, efficacy and effectiveness.

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Appendices

Information Sheet

You are invited to become a participant in the study of " Self-Compassion as a Mediator Between Maladaptive Perfectionism and Anxiety in College Students"

This specific study is concerned with the college student population, therefore if you are a student you are eligible to participate. Participation will consist of the completion of 4 questionnaires which are relatively short and will not take up a lot of your time. Basic demographic information will also be asked for and it will not be necessary to disclose your name.

You may decline to answer any questions presented during the study if you so wish. All information you provide is considered completely confidential. Data collected during this study will be retained and protected to the extent to which only researcher conducting the study will have access to it.

Evidently the study is concerned with several primary variables that can be classified as sensitive topics. If you have a history with or are currently engaged with any sort of emotional stress, it is recommended that you re-evaluate your decision to take part in the study if you think you may be susceptible to negative feelings brought about via these measures. If you chose to take part in the study and find you are undergoing a negative experience, you should withdraw from participating as you are fully entitled to.

Consent Form

In agreeing to participate in this research I understand the following:

- This research is being conducted by Simon Murtagh, an undergraduate psychology student at the School of Business, National College of Ireland.
- The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.
- If I have any concerns about participation I understand that I may refuse to participate or withdraw at any stage.
- I have been informed as to the general nature of the study and agree voluntarily to participate.
- There are possible discomforts and/or risks associated with participation given the nature of what the study is investigating.
- Although the risk is minimal I am fully aware of what the study is assessing.
- All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business. No participant's data will be identified by name at any stage of the data analysis or in the final report.
- Before and/or after my participation, any questions or concerns I have will be fully addressed by emailing the researcher at Simon.Murtagh94@gmail.com or the researchers supervisor fearghal.obrien@ncirl.ie.

- I may withdraw from this study at any time. Upon completion of the questionnaires, it will not be possible for the researcher to retract my data as it will be de-identified within the dataset.

I hereby state that I have read the information letter and informed consent form and declare my consent to take part in the study specified in the above text.

The Self-Compassion Scale

1. I'm disapproving and judgmental about my own flaws and inadequacies.
2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
5. I try to be loving towards myself when I'm feeling emotional pain.
6. When I fail at something important to me I become consumed by feelings of inadequacy.
7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
8. When times are really difficult, I tend to be tough on myself.
9. When something upsets me I try to keep my emotions in balance.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm intolerant and impatient towards those aspects of my personality I don't like.
12. When I'm going through a very hard time, I give myself the caring and tenderness I need.
13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
14. When something painful happens I try to take a balanced view of the situation.
15. I try to see my failings as part of the human condition.
16. When I see aspects of myself that I don't like, I get down on myself.
17. When I fail at something important to me I try to keep things in perspective.
18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

19. I'm kind to myself when I'm experiencing suffering.
20. When something upsets me I get carried away with my feelings.
21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
22. When I'm feeling down I try to approach my feelings with curiosity and openness.
23. I'm tolerant of my own flaws and inadequacies.
24. When something painful happens I tend to blow the incident out of proportion.
25. When I fail at something that's important to me, I tend to feel alone in my failure.
26. I try to be understanding and patient towards those aspects of my personality I don't like.

The Almost Perfect Scale – Revised

3. I often feel frustrated because I can't meet my goals.
6. My best just never seems to be good enough for me.
9. I rarely live up to my high standards.
11. Doing my best never seems to be enough.
13. I am never satisfied with my accomplishments.
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.
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.
23. I often feel disappointment after completing a task because I know I could have done better.

The Penn State Worry Questionnaire

1. If I do not have enough time to do everything, I do not worry about it.
2. My worries overwhelm me.
3. I do not tend to worry about things.
4. Many situations make me worry.
5. I know I should not worry about things, but I just cannot help it.
6. When I am under pressure I worry a lot.
7. I am always worrying about something.
8. I find it easy to dismiss worrisome thoughts.

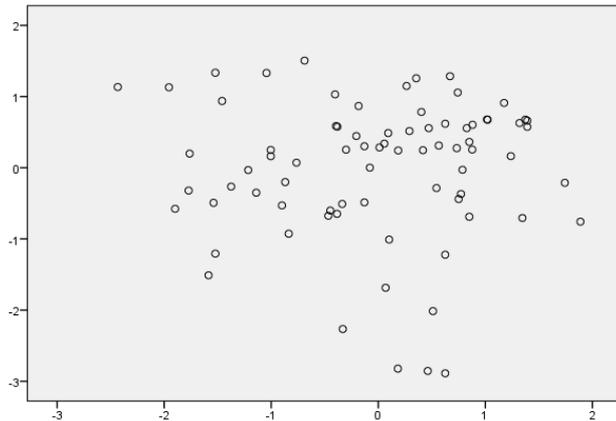
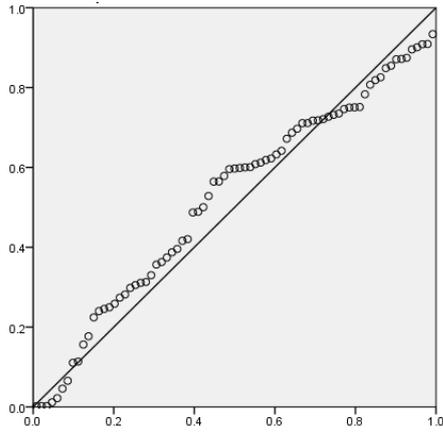
9. As soon as I finish one task, I start to worry about everything else I have to do.
10. I never worry about anything.
11. When there is nothing more I can do about a concern, I do not worry about it any more.
12. I have been a worrier all my life.
13. I notice that I have been worrying about things.
14. Once I start worrying, I cannot stop.
15. I worry all the time.
16. I worry about projects until they are all done.

The Beck Anxiety Inventory

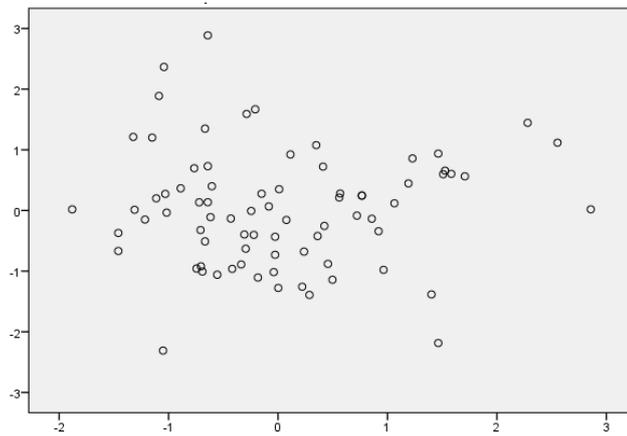
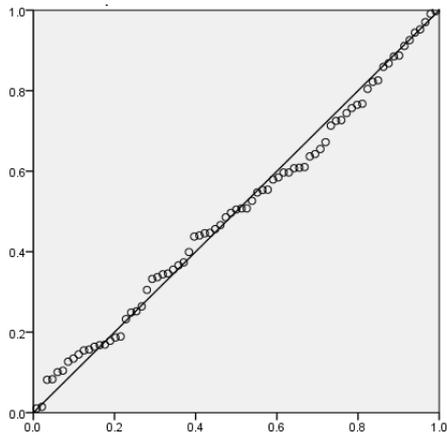
1. Numbness or tingling
2. Feeling hot
3. Wobbliness in legs
6. Dizzy or lightheaded
7. Heart pounding/racing
8. Unsteady
12. Hands trembling
13. Shaky
17. Scared
19. Faint / lightheaded
20. Face flushed
21. Hot/cold sweats

Residuals of Regression Analyses for Mediation 1

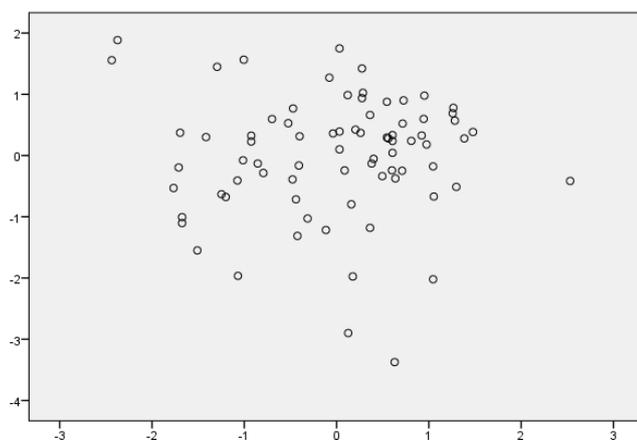
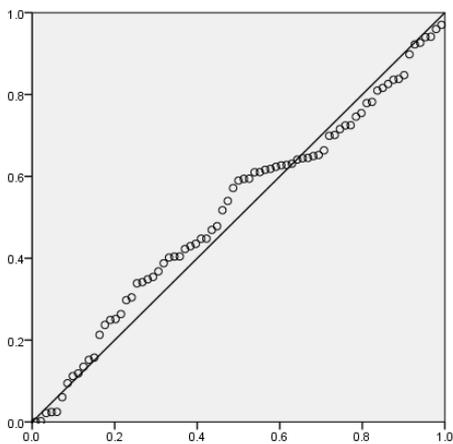
Step 1



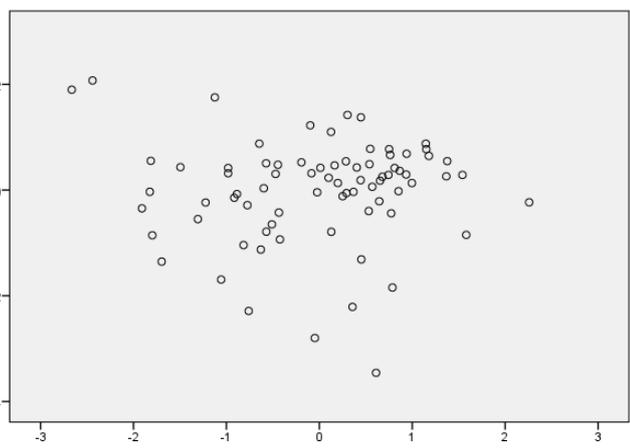
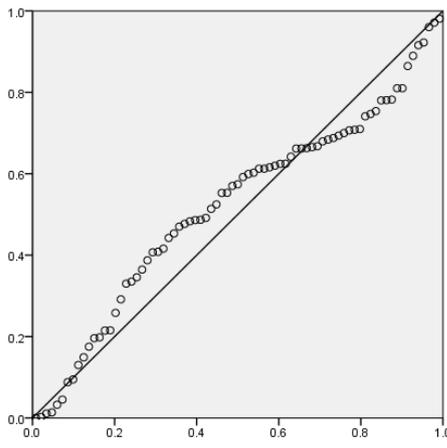
Step 2



Step 3

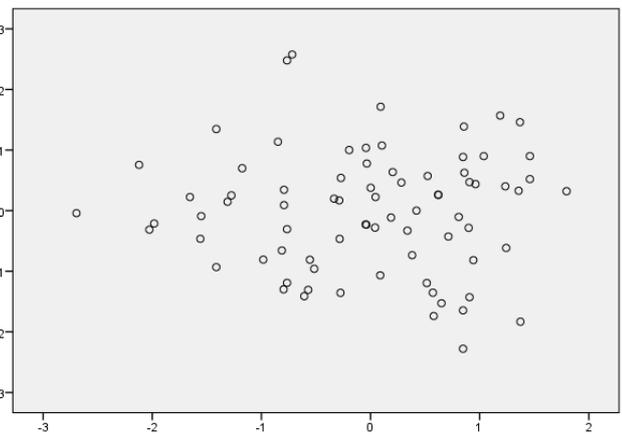
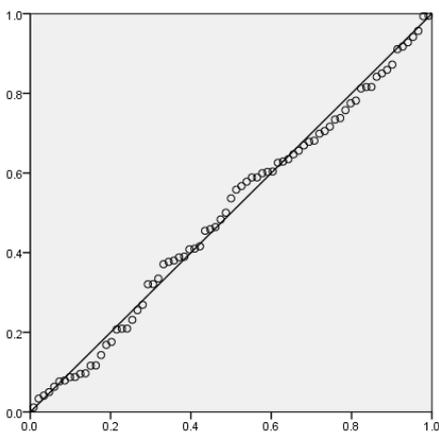


Step 4

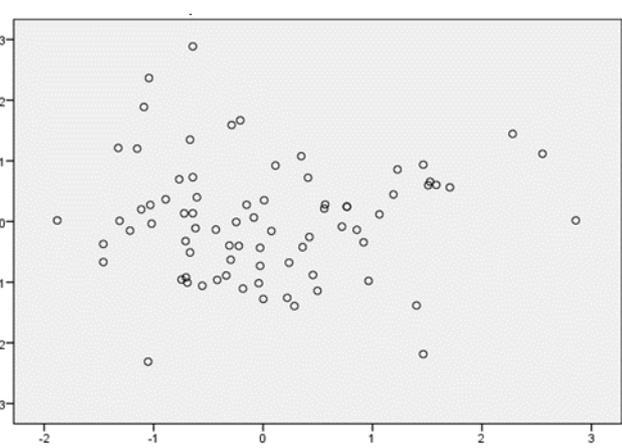
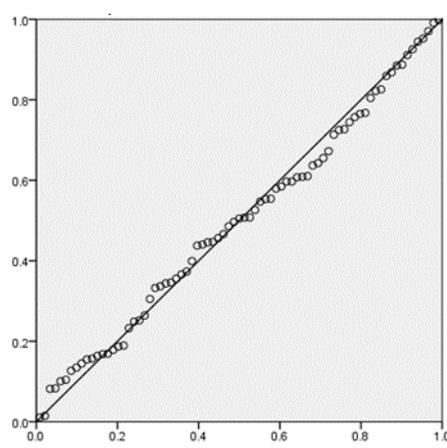


Residuals of Regression Analyses for Mediation 2

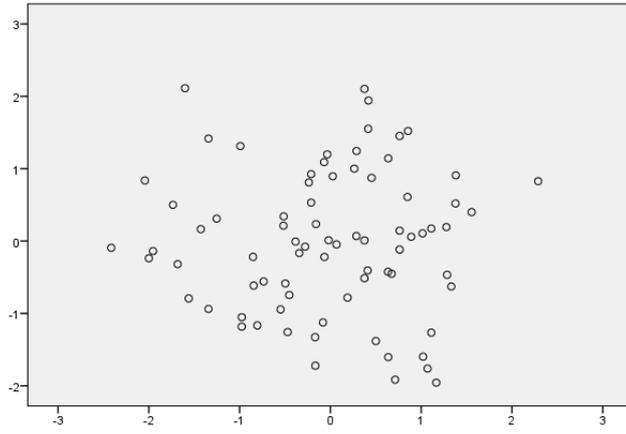
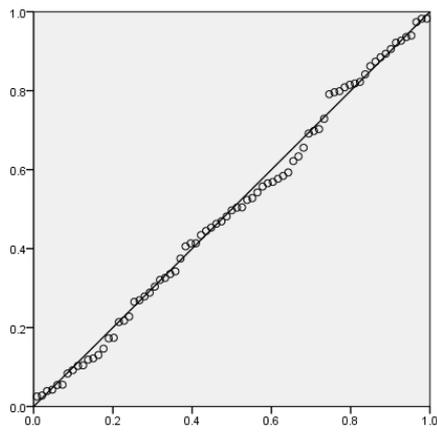
Step 1



Step 2



Step 3



Step 4

