Self-critical perfectionism and distress:

Moderated mediation models of anxiety sensitivity and experiential avoidance

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Abstract

Self-critical (SC) perfectionism is a cognitive-personality vulnerability factor associated with a host of negative psychosocial outcomes, including depressive and anxious symptoms. The goal of my dissertation was to examine anxiety sensitivity and experiential avoidance as moderating and mediating mechanisms in the relationship between SC perfectionism and distress. Based on an integration of previous theory and research, two hypothesized moderated mediation models were tested across two articles. Model 1 tested whether the indirect effect of SC perfectionism on distress symptoms through anxiety sensitivity was moderated by experiential avoidance. Model 2 tested whether the mediating effect of experiential avoidance in the relation between SC perfectionism and distress was moderated by anxiety sensitivity.

Article 1 examined the applicability of these moderated mediation models in the longitudinal relation among the self-critical (SC) and personal standards (PS) perfectionism dimensions and anxious and depressive symptoms over two years in a sample of 297 community adults. Article 1 included a three-wave longitudinal design where participants completed self-report measures of SC and PS perfectionism, anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms at Time 1. Participants repeated measures of anxiety sensitivity, experiential avoidance, and symptoms at Time 2 one year later, and symptoms measures at Time 3 two years after baseline. Results with Model 1 showed that for those with higher Time 1 experiential avoidance, Time 2 anxiety sensitivity mediated the link between Time 1 SC perfectionism and Time 3 anxious arousal symptoms. Results with Model 2 showed that for those with moderate to higher Time 1 anxiety sensitivity, Time 2 experiential avoidance mediated the link between Time 1 SC perfectionism and Time 3 general distress and anxious arousal symptoms. These moderated mediation effects were not found with PS perfectionism.

Article 2 aimed to replicate and extend the findings from Article 1 by examining these relations in the context of daily living. Specifically, Article 2 included two studies that tested the same moderated mediation models predicting the maintenance of daily negative affect using experience sampling (Study 1) and daily diary (Study 2) methods. In Study 1, 146 community adults completed self-report measures assessing perfectionism and anxiety sensitivity and then completed an experience sampling procedure involving five within-day reports that assessed experiential avoidance and negative affect over eight consecutive days. In Study 2, 154 community adults completed self-report measures assessing perfectionism and then completed one daily diary at bedtime for 14 consecutive days assessing anxiety sensitivity, experiential avoidance, and negative affect. In both Study 1 and Study 2, moderated mediation results with Model 1 showed that aggregated daily experiential avoidance moderated the indirect effect of SC perfectionism on aggregated daily negative affect through anxiety sensitivity. Daily experiential avoidance moderated the indirect effect of PS perfectionism on daily negative affect through anxiety sensitivity in Study 1, but these results were not replicated in Study 2. In contrast, results with Model 2 across both studies showed that anxiety sensitivity did not moderate the indirect effect of SC or PS perfectionism on daily negative affect through daily experiential avoidance.

In sum, the findings from the current thesis supported anxiety sensitivity and experiential avoidance as moderating and mediating processes among SC perfectionistic individuals. This thesis allows for a better understanding of the conditions under which anxiety sensitivity and experiential avoidance confer vulnerability to distress outcomes for SC perfectionistic individuals, which can inform prevention and intervention efforts that are tailored to an individual client's characteristics.

Résumé

Le perfectionnisme autocritique est un facteur de vulnérabilité de personnalité cognitive associé à une variété de résultats psychosociaux négatifs, y compris des symptômes dépressifs et anxieux. L'objectif de ma thèse était d'examiner la sensibilité à l'anxiété et l'évitement expérientiel en tant que mécanismes modérateurs et médiateurs dans la relation entre le perfectionnisme autocritique et la détresse. Sur la base d'une intégration des théories et des recherches antérieures, deux modèles de médiation modérés ont été supposés et testés à travers deux articles. Le modèle 1 a testé si l'effet indirect du perfectionnisme autocritique sur les symptômes de détresse via la sensibilité à l'anxiété était modéré par l'évitement expérientiel. Le modèle 2 a testé si l'effet médiateur de l'évitement expérientiel dans la relation entre le

L'article 1 a examiné l'applicabilité de ces modèles de médiation modérée dans la relation longitudinale entre les dimensions du perfectionnisme autocritique et des standards personnels et les symptômes anxieux et dépressifs sur une période de deux ans dans un échantillon de 297 adultes de la communauté. L'article 1 inclut un modèle longitudinal en trois vagues où les participants ont complété des mesures auto-rapportées du perfectionnisme autocritique et standards personnels, de la sensibilité à l'anxiété, de l'évitement expérientiel, et des symptômes anxieux et dépressifs au Temps 1. Les participants ont répété les mesures de la sensibilité à l'anxiété, de l'évitement expérientiel et des symptômes au Temps 2, un an plus tard, et ont répété encore les mesures des symptômes au Temps 3, deux ans après le début de l'étude. Les résultats du Modèle 1 ont révélé que pour les personnes ayant un évitement expérientiel plus élevé au Temps 1, la sensibilité à l'anxiété au Temps 2 a servi comme médiateur dans la relation entre le perfectionnisme autocritique au Temps 1 et les symptômes d'anxiété au Temps 3. Les résultats du Modèle 2 ont révélé que pour les personnes présentant une sensibilité à l'anxiété modérée élevée au Temps 1, l'évitement expérientiel au Temps 2 a servi comme médiateur dans la relation entre le perfectionnisme autocritique au Temps 1 et les symptômes de détresse générale et les symptômes d'anxiété au Temps 3. Ces effets de médiation modérés n'ont pas été trouvés avec le perfectionnisme des standards personnels.

L'Article 2 visait à reproduire et à renforcer les résultats de l'Article 1 en examinant ces relations dans le contexte de la vie quotidienne. Plus précisément, l'Article 2 inclut deux études qui ont testé les mêmes modèles de médiation modérée prédisant le maintien des affects négatifs quotidiens en utilisant des méthodes d'échantillonnage de l'expérience (Étude 1) et de rapports quotidiens (Étude 2). Dans l'Étude 1, 146 adultes de la communauté ont rempli des questionnaires d'auto-évaluation évaluant le perfectionnisme et la sensibilité à l'anxiété. Ensuite, pendant huit jours consécutifs, ils ont complété une procédure d'échantillonnage d'expériences qui comprenait cinq rapports au cours de la journée qui évaluaient l'évitement expérientiel et l'affect négatif. Dans l'Étude 2, 154 adultes de la communauté ont rempli des questionnaires d'auto-évaluation évaluant le perfectionnisme et ont ensuite rempli un rapport quotidien à l'heure du coucher pendant 14 jours consécutifs évaluant la sensibilité à l'anxiété, l'évitement expérientiel et l'affect négatif. Dans l'Étude 1 et l'Étude 2, les résultats de la médiation modérée avec le Modèle 1 ont révélé que l'évitement expérientiel quotidien agrégé modérait l'effet indirect du perfectionnisme autocritique sur l'affect négatif quotidien via la sensibilité à l'anxiété. L'évitement expérientiel quotidien a aussi modéré l'effet indirect du perfectionnisme des standards personnels sur l'affect négatif quotidien via la sensibilité à l'anxiété dans l'Étude 1, mais ces résultats n'ont pas été répliqués dans l'Étude 2. En contraste, les résultats avec Modèle 2 dans les deux études ont révélé que la sensibilité à l'anxiété n'a pas modéré l'effet indirect du

perfectionnisme autocritique ou des standards personnels sur l'affect négatif quotidien via l'évitement expérientiel quotidien.

En résumé, les résultats de la présente thèse démontrent que la sensibilité à l'anxiété et l'évitement expérientiel constituent d'importants processus modérateurs et médiateurs chez les individus présentant un perfectionnisme autocritique plus élevé. Cette thèse souligne l'importance de ne pas seulement considérer les analyses des effets principaux en illustrant comment les exceptions et les différences entre les individus ayant un perfectionnisme autocritique élevé peuvent influencer leur vulnérabilité à la détresse. Ces résultats ont d'importantes implications cliniques qui peuvent bénéficier le traitement individualisé de la dépression et de l'anxiété chez les individus présentant un perfectionnisme autocritique plus prononcé afin d'informer des efforts de prévention et d'intervention qui sont adaptés aux caractéristiques d'un individuel.

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Statement of Original Contribution

This doctoral thesis provides several original contributions to our understanding of the relationship between personality, anxiety sensitivity, experiential avoidance, and negative psychological outcomes. Research has demonstrated a robust and consistent relationship between perfectionism and negative psychosocial outcomes, such as depression and anxiety. Previous research has also highlighted anxiety sensitivity and experiential avoidance as transdiagnostic vulnerability factors that serve as important mechanisms in the development and maintenance of psychological distress, while also suggesting interactive relations amongst these constructs. However, research has yet to directly examine the relationship between self-critical (SC) perfectionism, anxiety sensitivity, experiential avoidance, and negative outcomes, such as depressive and anxious symptoms. Indeed, while some studies have examined anxiety sensitivity and experiential avoidance as stand-alone mediators in the association between SC perfectionism and distress outcomes, studies have yet to examine whether these mechanisms are conditional on bordering psychological vulnerabilities. No research has tested whether the vulnerability associated with anxiety sensitivity for SC perfectionistic individuals is conditional on (i.e., moderated by) experiential avoidance, as well as whether the vulnerability associated with experiential avoidance is conditional on anxiety sensitivity.

Based on this background, the articles in the present thesis provide a number of novel contributions to the literature. Article 1 was the first to test two moderated mediation models of anxiety sensitivity and experiential avoidance in the relationship between SC perfectionism and depressive and anxious symptoms using a three-wave longitudinal design over two years. The longitudinal moderated mediation analyses in Article 1 provided a novel examination of the longitudinal effects of SC perfectionism on anxiety sensitivity, experiential avoidance, and

depressive and anxious symptoms, controlling for prior levels of each variable. The findings from Article 1 demonstrated that different combinations of higher versus lower levels of anxiety sensitivity and experiential avoidance differentially predicted vulnerability to distress for individuals with greater SC perfectionism. Thus, these findings demonstrated that exceptions and differences between SC perfectionistic individuals that can have important implications for their vulnerability to depressive and anxious symptoms, despite the strong associations among these variables.

Article 2 included two studies that provide an original contribution to the literature by assessing how higher versus lower levels of anxiety sensitivity and experiential avoidance combine in the context of daily living to explain the maintenance of daily negative affect among individuals with greater SC perfectionism. The use of repeated measures in both studies provide a more ecologically valid understanding of self-critical perfectionistic individuals' daily tendencies that maintain negative mood. Study 1 utilized an experience sampling method of five within-day reports over eight consecutive days, while Study 2 utilized a daily diary method consisting of one diary at bedtime for 14 consecutive days. Together, both studies of Article 2 provide a novel demonstration of aggregated daily experiential avoidance and anxiety sensitivity as important factors that combine to moderate and mediate the relationship between SC perfectionism and the maintenance daily negative affect.

Taken together, the current thesis contributes to our understanding of the association between the personality vulnerability of SC perfectionism to distress outcomes. This research employed several novel methods, including the use of a multiple-wave longitudinal design spanning over two years, the inclusion of experience sampling and daily diary methods, and the use of moderated mediation analyses in community adult samples. Specifically, the articles in this thesis were the first to demonstrate that although there were moderate to strong associations among SC perfectionism, anxiety sensitivity, and experiential avoidance, different combinations of higher versus lower levels of anxiety sensitivity and experiential avoidance differentially predicted vulnerability to distress outcomes among individuals with higher SC perfectionism. This refutes notions that anxiety sensitivity and experiential avoidance capture redundant processes and supports the potential utility of considering the combined effects of related selfregulatory vulnerabilities. As such, this thesis contributes to the literature by highlighting the importance of moving beyond main effects analyses, which consider relationships on average, when examining the effects of psychological vulnerability factors. Rather, this thesis supports the utility of examining the effects of being an exception to the average, as there can be exceptions and differences among SC perfectionistic individuals that can have important implications for their vulnerability to distress. Finally, the results from this thesis have meaningful clinical implications and may benefit the individualized treatment of depression and anxiety among SC perfectionistic individuals by informing prevention and intervention efforts that are specifically tailored to an individual client's characteristics.

Contribution of Authors

Two manuscripts were included in the present doctoral thesis. The first article "Selfcritical perfectionism and anxious and depressive symptoms over two years: Moderated mediation models of anxiety sensitivity and experiential avoidance" (Article 1) was co-authored by me and Dr. David Dunkley. Article 1 was submitted for publication and received an invitation to revise and resubmit the article from the journal Behavior Therapy. The revised article was resubmitted in December 2023 and is currently under review. I came up with the idea to examine whether anxiety sensitivity and experiential avoidance combine to explain distress among SC perfectionistic individuals. I independently conducted the literature review that led to the research questions explored in both Article 1 and Article 2, which were further refined with input from Dr. Dunkley. The data for Article 1 included the combination of two separate samples. The data for the first sample was collected by graduate and undergraduate students in Dr. Dunkley's laboratory. The data for the second sample was collected by me and other graduate and undergraduate students in Dr. Dunkley's laboratory. I completed data analysis and interpretation with input from Dr. Dunkley. I wrote the manuscript and made additional edits during the publication revision process with input from Dr. Dunkley.

The second article, "Self-critical perfectionism and the maintenance of daily negative affect: Two moderated mediation studies of anxiety sensitivity and experiential avoidance" (Article 2) was co-authored by me and Dr. Dunkley. Article 2 comprises two studies. The data for both studies was collected by graduate and undergraduate students in Dr. Dunkley's laboratory. For both studies in Article 2, I conducted the literature review, developed the research questions, completed data analysis, and interpreted the results with input from Dr. Dunkley. Lastly, I wrote and edited the manuscript with editorial feedback from Dr. Dunkley.

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List of Abbreviations

Self-critical (SC)

Personal standards (PS)

Frost Multidimensional Perfectionism Scale (FMPS)

Hewitt and Flett Multidimensional Perfectionism Scale (HMPS)

Revised Almost Perfect Scale (APS-R)

Depressive Experiences Questionnaire (DEQ)

Experience sampling methodology (ESM)

Anxiety Sensitivity Index-3 (ASI-3)

Acceptance and Action Questionnaire-II (AAQ–II)

Mood and Anxiety Symptom Questionnaire (MASQ)

Confidence interval (CI)

Acceptance and Commitment Therapy (ACT)

Dialectical Behavior Therapy (DBT)

Anxiety (Anx.)

Experiential (Exp.)

Anhedonic (Anh.)

Time 1 (T1)

Time 2 (T2)

Time 3 (T3)

Brief Experiential Avoidance Questionnaire (BEAQ)

Positive and Negative Affect Schedule – Short Form (PANAS-SF)

Positive and Negative Affect Scale (PANAS)

Multidimensional Experiential Avoidance Questionnaire (MEAQ)

General Introduction

Over the past three decades, perfectionism has received increasing theoretical and empirical attention as a cognitive-personality factor that increases vulnerability to a wide range of psychological problems (see Egan et al., 2011; Limburg et al., 2017). Specifically, a number of reviews have found that perfectionism poses greater risk for depression (see Smith et al., 2021; Smith et al., 2016), anxiety (see Smith, Vidovic, et al., 2018), eating disorders (see Bardone-Cone et al., 2007; Kehayes et al., 2019), suicidality (see Smith, Sherry, et al., 2018), and other negative health outcomes (see Sirois & Molnar, 2016). Research has also shown that perfectionism is increasing, such that individuals demand higher expectations of themselves and place greater importance on attaining perfection than in previous generations (Curran & Hill, 2019). Finally, perfectionism has been shown to have adverse effects on the process and outcome of psychotherapy (see Blatt & Zuroff, 2005; Löw et al., 2020). Taken together, these findings emphasize the need for research examining factors that explain the robust relationship between perfectionism and negative psychosocial outcomes in order to reduce vulnerability to these outcomes and address obstacles to psychotherapy for perfectionistic individuals.

The purpose of this thesis was to examine the moderating and mediating roles of two selfregulatory constructs, anxiety sensitivity and experiential avoidance, in explaining the relation between perfectionism and distress. Self-regulatory mechanisms involve the different ways individuals react to and manage their emotional reactivity, and they have been proposed as an important explanatory mechanism in the relationship between personality and distress (e.g., Aldao et al., 2010; Bijttebier et al., 2009). Identifying the mechanisms by which experiential avoidance and anxiety sensitivity combine to exacerbate and maintain distress among SC perfectionistic individuals may uncover more focused and effective intervention targets. To explore this question, I will first outline the perfectionism dimensions presented in this thesis. Next, I will introduce anxiety sensitivity and experiential avoidance as two self-regulatory processes that may play a role in the association between perfectionism and negative outcomes. I will then argue for the need to consider the interactive relations among these processes. Finally, I will describe how this thesis addressed gaps in the literature and contributes to a better understanding of how perfectionism relates to negative psychosocial outcomes.

Perfectionism Dimensions, Distress, and (Mal)adaptive Functioning

Perfectionism is typically viewed as a multidimensional construct, but it has been defined and measured in many ways. The three multidimensional models of perfectionism that have been most influential in the perfectionism literature include those of Frost and colleagues (1990), Hewitt and Flett (1991), and Slaney and colleagues (2001). Although these models stipulate different subdimensions of perfectionism, they share common features, and each contain facets portraying primarily adaptive versus maladaptive characteristics. Frost and colleagues (1990) conceptualized the perfectionism construct to be comprised of several different facets, namely concern over mistakes, doubts about actions, personal standards, parental expectations, parental criticism, and organization. They emphasized the important distinction between setting and striving for high personal standards, which was not necessarily viewed as maladaptive in and of itself, and concern over mistakes, which was viewed as being more maladaptive in nature (Frost et al., 1990). Hewitt and Flett (1991) considered perfectionism to consist of both intrapersonal (i.e., self-oriented perfectionism) and interpersonal (i.e., other-oriented perfectionism, socially prescribed perfectionism) dimensions. They demonstrated that in contrast to self-oriented and other-oriented perfectionism, socially prescribed perfectionism was more consistently related to negative outcomes (Hewitt & Flett, 1991). Finally, Slaney and colleagues (2001) conceptualized

having high standards for performance and being neat or orderly as the adaptive components of perfectionism and discrepancy (i.e., the perceived inability to meet the high standards set for the self) as the defining maladaptive component of perfectionism.

Factor analytic studies have consistently yielded two higher-order dimensions that underlie the different theoretical frameworks and measures of perfectionism (e.g., Dunkley, Blankstein, et al., 2006; Stoeber & Otto, 2006). These two higher-order dimensions have been referred to as personal standards (PS) and self-critical (SC) perfectionism (e.g., Dunkley et al., 2003). PS perfectionism involves the setting and pursuing of high standards and goals for oneself. PS perfectionism measures include the personal standards scale of the Frost et al. (1990) Multidimensional Perfectionism Scale (FMPS; e.g., "It is important to me that I be thoroughly competent in everything I do"), the self-oriented perfectionism scale of the Hewitt and Flett (1991) Multidimensional Perfectionism Scale (HMPS; e.g., "One of my goals is to be perfect in everything I do"), and the High Standards scale of the Slaney et al. (2001) revised Almost Perfect Scale (APS-R; e.g., "I have a strong need to strive for excellence"). SC perfectionism involves constant and harsh self-scrutiny, overly critical self-evaluation tendencies, and chronic concerns about others' expectations and criticism. The SC perfectionism measures include the Self-Criticism scale of the Depressive Experiences Questionnaire (DEQ; e.g., "I tend to be very critical of myself"; Blatt et al., 1976), the Socially-Prescribed Perfectionism scale of the HMPS (e.g., "The better I do, the better I am expected to do"), the Concern Over Mistakes scale of the FMPS (e.g., "If I fail at work/school, I am a failure as a person"), and the Discrepancy scale of the APS-R (e.g., "I am hardly ever satisfied with my performance").

The SC and PS perfectionism dimensions can be further distinguished by examining their associations with indicators of psychological distress, well-being, and functioning. SC has been

consistently related to depressive and anxious symptoms (e.g., Antony et al., 1998; Mandel et al., 2015; Stoeber & Otto, 2006) and lower well-being (e.g., higher negative affect, lower positive affect; Dunkley, Blankstein, et al., 2006; Dunkley, Zuroff, et al., 2006; Richard et al., 2021). Conversely, PS perfectionism often exhibits weak to negligible relations with depressive and anxious symptoms (e.g., Dunkley et al., 2000; Enns & Cox, 1999; Mandel et al., 2015) and negative affect (e.g., Prud'homme et al., 2017; Richard et al., 2021). Results from recent metaanalyses of longitudinal studies have also found the indicators of SC perfectionism to predict depressive symptoms (Smith et al., 2021; Smith et al., 2016) and suicidality (Smith, Sherry, et al., 2018) over time. However, the evidence for SC perfectionism prospectively predicting anxious symptoms was mixed, such that only one indicator of SC perfectionism, concerns over mistakes, emerged as a significant predictor of anxious symptoms (Smith, Vidovic, et al., 2018). These meta-analytic reviews also found small positive prospective relationships between certain facets of PS perfectionism with depressive symptoms (Smith et al., 2021; Smith et al., 2016) and suicidality (Smith, Sherry, et al., 2018), but the vulnerability associated with PS was found to be through shared overlap with SC perfectionism (see Smith et al., 2016). Taken together, these findings suggest that SC perfectionism, in contrast to PS, represents a more maladaptive dimension of perfectionism that is associated with psychological distress. As such, there is a need for research examining why individuals with higher SC perfectionism experience more distress over time, as identifying and understanding the factors that maintain this association may be helpful in reducing vulnerability to negative outcomes and improve intervention efforts.

In evidence-based interventions, longitudinal explanatory case conceptualizations are used for complex cases to explain the links among clients' developmental experiences, dysfunctional attitudes, behavioral dispositions, and situations that trigger or maintain distress (e.g., Kuyken et al., 2009; Persons, 2012). Individuals higher in PS perfectionism are theorized to internalize extremely high parental expectations of productivity and success, which manifests as a tendency for these individuals to adopt an active, problem-focused coping style in response to stressful situations (Dunkley et al., 2000; Flett et al., 2002). On the other hand, SC perfectionism is theorized to originate as a result of conditional parental approval that is contingent on meeting extremely high expectations of success and productivity, along with parental harshness and punitiveness when such standards are not met (e.g., Blatt, 1995; Flett et al., 2002). This environment is theorized to foster doubt and uncertainty that any effort is good enough and dysfunctional self-worth contingencies that are based on performance (Blatt & Homann, 1992; Rogers, 1951). This, in turn, leads individuals higher in SC perfectionism to respond to their environment in a way that contributes to problematic emotional experiences.

Indeed, research has shown that the robust association between SC perfectionism and chronic distress is explained by their propensity to: (1) instigate higher levels of daily stress due to their tendency to magnify the negative aspects of events and engage in excessively harsh and self-critical evaluations; (2) adopt a defensive relational style that elicits negative reactions from others (see Smith et al., 2020; Zuroff et al., 2004); and (3) utilize avoidant coping strategies as a result of their perceived deficiencies and alleged inability to cope with stressors to their own and others' satisfaction (e.g., Dunkley, Ma, et al., 2014; Dunkley, Sanislow, et al., 2006; Dunkley et al., 2003). In addition, studies have shown that individuals with higher SC perfectionism exhibit heightened emotional reactivity (i.e., greater increases in negative affect and/or decreases in positive affect) to stressful situations that activate their concerns about failure, criticism from others, and a loss of control (e.g., Dunkley et al., 2012; Dunkley, Mandel, et al., 2014).

Given SC perfectionistic individuals' pervasive stress management and emotional reactivity problems that generate persistent distress, it may be important to examine whether variables related to the self-regulation of emotional experiences serve as vulnerability or protective factors for these individuals. Self-regulatory mechanisms, which involve the cognitive, emotional, and behavioral responses by which individuals react to and manage emotional reactivity, have been proposed as an explanatory mechanism in the relation between personality and distress (e.g., Bijttebier et al., 2009). Individual differences in self-regulatory or emotional responding tendencies, especially how individuals react to or tolerate *aversive* internal experiences, have been implicated in the development of psychopathology (see Aldao et al., 2010). My dissertation will examine the role of two constructs related to the self-regulation of emotional experiences – namely, anxiety sensitivity and experiential avoidance – in explaining the relation between perfectionism and negative outcomes. Identifying important mechanisms in this relationship can inform intervention efforts for individuals with higher SC perfectionism.

Anxiety Sensitivity, Experiential Avoidance, and Distress

Theory and research suggest that anxiety sensitivity and experiential avoidance may represent two self-regulatory processes that maintain the relation between SC perfectionism and distress. Anxiety sensitivity involves a fear of the behaviors and physical sensations associated with anxiety, or a "fear of fear", which arises due to the belief that these symptoms can lead to negative social, physical, or psychological consequences (McNally & Lorenz, 1987; Reiss & McNally, 1985; Reiss et al., 1986). Thus, while most individuals view anxiety-related symptoms (e.g., heart palpitations) as unpleasant, those with higher anxiety sensitivity regard them with dread due to their maladaptive beliefs about such sensations (e.g., believing that heart palpitations imply one is having a heart attack; Taylor, 2020). According to the expectancy model of fear, anxiety sensitivity contributes to individuals' distress and impairment over time because the anticipation of deleterious consequences of anxious arousal serves to further exacerbate one's symptoms, which can lead to an intense fear of these experiences and promote the use of maladaptive avoidance and escape responses (e.g., Otto et al., 2016; Reiss, 1991).

On the other hand, experiential avoidance involves an unwillingness to remain in contact with present-moment aversive private experiences (e.g., thoughts, emotions, memories, bodily sensations) and subsequent efforts to alter, control, or eliminate these experiences (Hayes et al., 1996). While experiential avoidance can reduce the experience of unwanted private experiences in the short-term, the persistent and rigid use of avoidance paradoxically increases distress in the long-term by increasing the frequency, severity, and accessibility of the exact experiences one wishes to avoid (e.g., Gold & Wegner, 1995). In addition, the struggle to control or avoid unwanted private experiences results in less contact with the present experience and ineffective functioning by leading to actions that are inconsistent with one's goals and values, which further enhances distress (Hayes et al., 2006; Hayes et al., 1999; Kashdan et al., 2006). Indeed, experiential avoidance has received significant attention in the clinical and research literatures because of its potential importance in explaining psychopathology. The focus on addressing an individuals' maladaptive behavioural or cognitive responses to distress (i.e., avoidance, escape) rather than focusing on the content of distress has marked a significant shift in how psychopathology is understood (Hayes et al., 2006).

Both anxiety sensitivity and experiential avoidance have received increasing empirical attention as transdiagnostic vulnerability factors implicated in the development and maintenance of psychopathology. Two meta-analyses have found anxiety sensitivity to be consistently and robustly associated with anxiety, trauma, and mood psychopathology (see Naragon-Gainey,

2010; Olatunji & Wolitzky-Taylor, 2009). Studies have also shown associations between elevated anxiety sensitivity and obsessive-compulsive symptoms (Calamari et al., 2008; Wheaton et al., 2012), disordered eating (Anestis et al., 2008; DeBoer et al., 2012), substance use (Otto et al., 2016), as well as chronic medical conditions and negative health behaviors (Horenstein et al., 2018). Similarly, experiential avoidance has been related to depression and anxiety (Kashdan et al., 2006; Kashdan & Rottenberg, 2010), post-traumatic stress symptoms (Marx & Sloan, 2005; Seligowski et al., 2015), and substance abuse (Shorey et al., 2017; Stewart et al., 2002), among others (see Chawla & Ostafin, 2007; Hayes et al., 2004). In addition, a metaanalysis found that experiential avoidance accounted for 16 to 28% of variance in psychological difficulties and had a moderately strong relationship with psychological distress across diagnostic categories (Hayes et al., 2006).

Theory and research attempting to disentangle the similarities and differences between anxiety sensitivity and experiential avoidance suggest that they are indeed related but distinct constructs. Both share conceptual overlap with distress tolerance (i.e., the perceived capacity and behavioral act of withstanding negative emotional states; Zvolensky et al., 2011) and emotion regulation (i.e., the application of strategies to alter or control the experience and expression of emotions; Gross, 2002). However, while both constructs involve an intolerance of internal events, experiential avoidance has been conceptualized as a broader factor that involves distress tolerance and emotion regulation strategies used to avoid or escape all forms of distressing internal experiences (e.g., thoughts, emotions, memories, bodily sensations; Hayes et al., 1996; Kashdan et al., 2006; Kashdan & Rottenberg, 2010; McHugh et al., 2013). Conversely, anxiety sensitivity has been described as a more specific, lower-order factor of distress intolerance that involves arousal-related (i.e., anxiety) sensations specifically (Bernstein et al., 2009; McNally, 2002; Mitchell et al., 2013). In addition, anxiety sensitivity has been conceptualized as a traitlike set of dysfunctional beliefs (Taylor, 2020), whereas experiential avoidance has been described as a psychological process involving an evaluation of or reaction to a multitude of unacceptable internal experiences and the subsequent strategies to control or evade them (Hayes et al., 1996). In other words, anxiety sensitivity focuses more on the content of distress, whereas experiential avoidance captures one's responses to distress (Hayes et al., 2006).

Importantly, studies have shown that both experiential avoidance (Aldao et al., 2010; Chawla & Ostafin, 2007; Kashdan et al., 2006) and anxiety sensitivity (Horenstein et al., 2018; McHugh et al., 2011) demonstrate independent and unique relations with specific distress tolerance and emotion regulation strategies, as well as distress outcomes. Consistent with the conceptualization of experiential avoidance as a broader construct than anxiety sensitivity, experiential avoidance has been significantly related to depression in a sample of undergraduate students (Tull & Gratz, 2008) and reduced functioning and impairment in anxiety-disordered adults (Gloster et al., 2011), after controlling for anxiety sensitivity. However, two crosssectional studies found that experiential avoidance was unrelated to anxious symptoms above and beyond anxiety sensitivity, whereas anxiety sensitivity was significantly related to anxious symptoms over and above experiential avoidance in a sample of college students (Berman et al., 2010) and adults with anxiety disorders (Wheaton et al., 2010). These findings suggest that anxiety sensitivity may be specifically relevant in predicting anxious symptoms.

SC Perfectionism and Distress: Anxiety Sensitivity and Experiential Avoidance as Mediators

Anxiety sensitivity and experiential avoidance have been widely discussed in descriptions of SC perfectionism. Albert Ellis (2002) proposed that individuals higher in SC perfectionism may experience greater levels of anxiety sensitivity due to their marked fear of criticism and intolerance for failure that stems from their maladaptive belief that they must avoid embarrassment and/or negative evaluation at all costs. In other words, individuals with greater SC perfectionism are theorized to experience elevated fearfulness or reactivity to signals of anxiety because they interpret any degree of anxious arousal as a sign of weakness, failure, loss of control, or as a risk for negative evaluation from others (Flett et al., 2004). Empirically, two studies have found that SC perfectionism measures were positively related to anxiety sensitivity (Cox et al., 2001; Flett et al., 2004). Further, in a cross-sectional study of undergraduate students, Pirbaglou and colleagues (2013) found that anxiety sensitivity mediated the relationship between perfectionistic cognitions and symptoms of depression and anxiety.

Previous theory and research also suggest that individuals with higher SC perfectionism tend to engage in experiential avoidance, and this appears to explain the link between SC perfectionism and distress. SC perfectionistic individuals' tendency to experience excessive concerns about making mistakes and be overly critical in their self-evaluations has been suggested to motivate them to engage in experiential avoidance (e.g., Moroz & Dunkley, 2015). As such, individuals with higher SC perfectionism have a strong desire to escape from distressing thoughts, feelings, and memories in order to cope with their negative conceptualization of the self as being flawed, imperfect, and not good enough (Heatherton & Baumeister, 1991; Santanello & Gardner, 2007). However, the persistent struggle of individuals with greater SC perfectionism to control or avoid feelings of distress, opportunities for failure, and negative self-referential thoughts is theorized to paradoxically result in increased distress and ineffective functioning (Hayes et al., 2006; Hayes et al., 1999; Kashdan et al., 2006). A number of mediational studies have demonstrated that experiential avoidance explains the relation between SC perfectionism and a variety of negative outcomes, both cross-sectionally (Moroz & Dunkley, 2015; Santanello & Gardner, 2007) and longitudinally (Moroz & Dunkley, 2019).

SC Perfectionism, Anxiety Sensitivity, Experiential Avoidance, and Distress: Two

Moderated Mediation Models

The existing research examining the role of anxiety sensitivity and experiential avoidance in predicting distress has largely studied these variables in isolation and has focused on their main effects. Although this type of research is certainly useful, several scholars have suggested that the role of self-regulatory vulnerabilities, such as anxiety sensitivity and experiential avoidance, may be more complex than linear main effect models (e.g., Kashdan et al., 2008; Zvolensky et al., 2005). Given that anxiety sensitivity entails a fear of the symptoms of anxious arousal and experiential avoidance involves deliberate efforts to avoid or escape these fears and other unpleasant experiences, it is possible that anxiety sensitivity and experiential avoidance are dynamically related, rather than independent, processes that work together to explain the relation between SC perfectionism and distress. In line with this view, it has been argued that research examining the role of vulnerability factors should explore constructs' independent contributions, relations with bordering constructs, *and* interactive effects, as this may further advance our understanding of individuals' vulnerability for experiencing negative outcomes and have important treatment implications (Bardeen et al., 2014; Bernstein et al., 2009).

Moderated mediation, which tests whether the mediated relationship between two variables is moderated by another variable, may represent one possible way by which anxiety sensitivity and experiential avoidance may work together to explain SC perfectionistic individuals' distress. Based on the theory and research presented, the present thesis tested two hypothesized moderated mediation models explaining the relation between SC perfectionism and distress. Specifically, Model 1 tested whether the mediating effect of anxiety sensitivity was moderated by experiential avoidance, while Model 2 tested whether the mediating effect of experiential avoidance was moderated by anxiety sensitivity.

Model 1: SC Perfectionism, Anxiety Sensitivity, and Distress Moderated by Experiential Avoidance

Theory and research suggest that experiential avoidance may exacerbate (i.e., moderate) the association between anxiety sensitivity and distress. Specifically, the vulnerability associated with anxiety sensitivity may be intensified based on the way individuals respond to these feared states (Kashdan et al., 2008). As noted by Kashdan and colleagues (2008), "... there is a growing recognition that how individuals regulate emotional experiences, particularly whether they accept or avoid emotional experiences, is critical in understanding how anxious and fearful responding is maintained and exacerbated" (p. 430). In other words, the vulnerability associated with anxiety sensitivity may be exacerbated among individuals who are unwilling to experience distress and who therefore try to escape such experiences (i.e., individuals who also exhibit higher experiential avoidance; Bardeen, 2015; Hayes et al., 1996; Kashdan et al., 2008). The chronic and inflexible use of experiential avoidance in response to feared bodily sensations ultimately exacerbates distress as it reduces one's ability to disconfirm faulty threat appraisals and extinguish maladaptive fear responses (Ehlers & Clark, 2000; Foa & Kozak, 1986) while also consuming attention and leaving fewer resources to cope with the demands of everyday life (Kashdan et al., 2008). Conversely, if an individual finds anxiety-related sensations aversive but is willing to accept and tolerate them (i.e., lower experiential avoidance), this permits the individual to more objectively perceive and flexibly adapt to anxiety-inducing situations in daily life, rather than reacting to them in a catastrophic and excessive manner (Kashdan et al., 2008).

Empirically, some studies have demonstrated that experiential avoidance strengthens, or moderates, the relations between anxiety sensitivity and anxious symptoms (Bardeen, 2015; Bardeen et al., 2014; Cobb et al., 2017), depression (Zvolensky et al., 2015), perceived stress (Bardeen et al., 2013), and post-traumatic stress symptoms (Bardeen et al., 2015).

Research is needed that examines whether the vulnerability associated with anxiety sensitivity for individuals with higher SC perfectionism is conditional on (i.e., moderated by) the extent to which these individuals exhibit higher versus lower levels of experiential avoidance. Based on an integration of the theory and research presented above, it is hypothesized that individuals with higher SC perfectionism and higher experiential avoidance would experience greater anxiety sensitivity and distress because their unwillingness to remain in contact with negative self-referential thoughts and feelings increases the feelings of weakness, failure, and loss of control that accompany their anxious symptoms (Blatt, 1995; Kashdan et al., 2008). On the other hand, it is expected that individuals with higher SC perfectionism and lower experiential avoidance would experience lower anxiety sensitivity and distress as they would be better able to tolerate their negative self-referential thoughts and feelings, which decreases their fearful reactions towards their anxious symptoms while also allowing for greater attitudes of self-acceptance and self-compassion (e.g., "anxiety is part of the normal human experience"; Hayes et al., 2006; Moroz & Dunkley, 2019). To date, no studies have examined whether experiential avoidance moderates the effect of anxiety sensitivity in explaining the relation between SC perfectionism and distress.

Model 2: SC Perfectionism, Experiential Avoidance, and Distress Moderated by Anxiety Sensitivity

On the other hand, it is also possible that the vulnerability associated with experiential avoidance may be exacerbated by (i.e., moderated by) anxiety sensitivity. Otto and colleagues (Otto et al., 2016; Otto & Smits, 2018; Stein et al., 2020) theorized that the mechanism by which anxiety sensitivity confers risk for psychopathology is by functioning as an "amplification factor", such that individuals with elevated anxiety sensitivity have a tendency to overestimate the negative consequences of anxiety, which amplifies the aversiveness of physical and emotional anxiety-related sensations. Individuals with greater anxiety sensitivity may therefore be more likely to develop tendencies towards experiential avoidance by becoming increasingly focused on avoiding or escaping these aversive experiences. The immediate relief from avoiding such perceived negative outcomes can, in turn, strengthen negative expectancies about these experiences, further reinforce the cycle of avoidance, and maintain distress (Zvolensky & Forsyth, 2002). Experiential avoidance has been found to mediate the relation between anxiety sensitivity and depressive symptoms (Stein et al., 2020; Tull & Gratz, 2008), eating disorder pathology (Espel-Huynh et al., 2019; Fulton et al., 2012), as well as the presence of borderline personality disorder (Gratz et al., 2008) and social anxiety disorder diagnoses (Panayiotou et al., 2014). Conversely, an individual with lower anxiety sensitivity who does not catastrophically interpret their arousal-related sensations may be more willing to tolerate them and persist in committed action rather than engage in experiential avoidance (Otto et al., 2016).

Research is needed to examine whether the mediated effect of SC perfectionism on distress through experiential avoidance is moderated by anxiety sensitivity. Integrating the theory and research presented above, it is hypothesized that individuals with higher SC perfectionism and higher anxiety sensitivity would experience elevated experiential avoidance and distress because the fears of loss of control and negative evaluations from others brought on by anxious symptoms increases their focus on avoiding such distressing experiences. The immediate relief from escaping their negative self-awareness reinforces SC perfectionistic individuals' cycle of avoidance (Zvolensky & Forsyth, 2002), which results in them giving up on pursuing behaviours in line with important goals and values (Hayes et al., 2006). Conversely, it is expected that individuals with higher SC perfectionism and lower anxiety sensitivity may exhibit lower experiential avoidance and distress as they will experience less fear and, in turn, less negative self-awareness when experiencing anxiety, allowing them to better tolerate such experiences and persist in committed action (Moroz & Dunkley, 2019; Otto et al., 2016). No research has examined whether the mediating effect of experiential avoidance in explaining the association between SC perfectionism and distress is conditional on anxiety sensitivity.

Gaps in Previous Research

The robust and consistent relation between SC perfectionism and a host of negative psychosocial outcomes highlights the need to investigate possible explanatory mechanisms. The above literature highlights the need to consider potential mediating and moderating mechanisms among self-regulatory processes, namely anxiety sensitivity and experiential avoidance, in explaining this association for SC perfectionistic individuals. However, there are several gaps in the literature that limit our understanding of these links.

First, there is a scarcity of research examining the link between SC perfectionism and anxiety sensitivity, especially research examining mediating and moderating hypotheses. The only study that examined anxiety sensitivity as a mediator of the relation between perfectionism and distress (Pirbaglou et al., 2013) used a measure of the frequency of perfectionistic thinking (PCI; Flett et al., 1998) rather than trait perfectionism, with the latter including internal (i.e., cognitive, motivation) *and* external (i.e., interpersonal) components (e.g., Hewitt & Flett, 1991).

Research is needed that includes measures of trait perfectionism with multiple indicators derived from various theoretical and empirical perspectives to comprehensively assess the different aspects of the SC and PS perfectionism dimensions (e.g., Dunkley et al., 2003).

Second, it is unknown whether the effects of anxiety sensitivity in explaining distress among individuals with higher SC perfectionism may be conditional on (i.e., moderated by) experiential avoidance. While several studies outlined above have supported that experiential avoidance strengthens the relationship between anxiety sensitivity and distress, no research has examined whether experiential avoidance moderates the indirect effect of SC perfectionism on distress through anxiety sensitivity. Research exploring such moderated mediation hypotheses can enhance our understanding of the vulnerability associated with anxiety sensitivity in explaining the prolonged distress experienced by SC perfectionistic individuals' by highlighting the conditions under which this association is enhanced by experiential avoidance.

Third, a limitation of the research examining the role of experiential avoidance in explaining SC perfectionistic individuals' distress is that these studies examined experiential avoidance as a stand-alone construct and focused on its main effects. Research is needed that tests experiential avoidance along with bordering psychological vulnerabilities, such as anxiety sensitivity, to better understand how vulnerabilities can work together to exacerbate distress. It is unknown whether the mediating effect of experiential avoidance for individuals with higher SC perfectionism is conditional on anxiety sensitivity. In other words, no research has tested whether anxiety sensitivity moderates the indirect effect of SC perfectionism on experiential avoidance and distress. Research examining the moderating role of anxiety sensitivity might further advance our understanding of SC perfectionistic individuals' established tendencies towards experiential avoidance (e.g., Moroz & Dunkley, 2015, 2019) by highlighting the

conditions under which individuals with higher SC perfectionism might be most likely to engage in experiential avoidance and in turn, are most vulnerable to experiencing prolonged distress.

Fourth, most of the existing research investigating the relations among SC perfectionism, anxiety sensitivity, and experiential avoidance have employed a cross-sectional design, which precludes evidence for causality. For example, the only study to examine anxiety sensitivity as a mediator of the relation between perfectionism and distress was cross-sectional (Pirbaglou et al., 2013). The longitudinal study of these relationships over time is needed to help clarify their direction (Cole & Maxwell, 2003). Given the substantial evidence highlighting the relevance of anxiety sensitivity in predicting anxious pathology (see Naragon-Gainey, 2010; Olatunji & Wolitzky-Taylor, 2009), this research might also help to clarify the conditions under which SC perfectionism confers vulnerability to anxious symptoms over time, as this prospective relationship has been inconsistent (see Smith, Vidovic, et al., 2018 for a review).

Finally, there is also a lack of research that utilizing repeated measures when testing these research questions. The vast majority of studies have employed one-occasion, retrospective summary assessments of mediators and outcomes, which represents a limitation of the current perfectionism literature. Research has shown that retrospective questionnaire methods are more susceptible to memory distortions and recall biases (e.g., Moskowitz, 1986). As such, studies utilizing repeated situational assessments, such as daily diary or experience sampling methodology (ESM) studies, are needed to allow for a more accurate and comprehensive understanding of how SC perfectionistic individuals' anxiety sensitivity and experiential avoidance tendencies explain their distress across time and in response to real-world situations (Shiffman et al., 2008).

The Present Thesis

This thesis aimed to address these gaps in the literature to increase our understanding of the explanatory mechanisms in the relation between SC perfectionism and negative psychosocial outcomes. Based on the theory and research outlined above, the two articles in this thesis examined two moderated mediation models of anxiety sensitivity and experiential avoidance in explaining the relation between SC perfectionism and depressive and anxious symptoms, as well as daily negative affect. Specifically, Model 1 tested whether experiential avoidance moderated the indirect effect of SC perfectionism on distress through anxiety sensitivity, while Model 2 tested whether anxiety sensitivity moderated the indirect effect of SC perfectionism on distress through anxiety sensitivity, while Model 2 tested whether anxiety sensitivity moderated the indirect effect of SC perfectionism on distress through anxiety sensitivity and experiential avoidance. A strength of this research was the use of samples of community adults that was bilingual and cross-cultural to a certain extent, which better assessed the generalizability of the findings relative to using university student samples.

Article 1 investigated the links between SC perfectionism, anxiety sensitivity, experiential avoidance, and depressive and anxious symptoms longitudinally in a sample of community adults. This research combined the samples from two previous studies (Moroz & Dunkley, 2019; Tobin & Dunkley, 2021) that collected three waves of data over a two-year period to investigate the moderating and mediating roles of anxiety sensitivity and experiential avoidance in explaining the relationship between SC perfectionism and anxious and depressive symptoms over two years. Specifically, Article 1 tested two moderated mediation models predicting general distress symptoms (i.e., symptoms that are shared between depression and anxiety), anxiety-specific symptoms (i.e., somatic arousal) and depression-specific symptoms (i.e., anhedonia) over two years. Article 1 also investigated whether the moderated mediation models were more uniquely related with the characteristics of SC rather than PS Perfectionism.
Article 2 included two studies that aimed to replicate and extend previous findings by examining the links between SC perfectionism, anxiety sensitivity, experiential avoidance, and the maintenance of daily negative affect. The first study in Article 2 used an experience sampling methodology (ESM) where community adults were asked to complete five within-day reports assessing experiential avoidance and negative affect over eight consecutive days. This study examined moderated mediation models of anxiety sensitivity and aggregated daily experiential avoidance across many different stressors in explaining the relation between SC perfectionism and the maintenance of aggregated daily negative affect. The second study in Article 2 aimed to replicate and extend the results from Study 1 in a separate sample of community adults. Study 2 utilized a daily diary methodology whereby participants were asked to complete one diary at bedtime assessing anxiety sensitivity, experiential avoidance, and negative affect for 14 consecutive nights. Study 2 in Article 2 tested moderated mediation models of aggregated daily anxiety sensitivity and experiential avoidance across stressors in explaining the relation between SC perfectionism and aggregated daily negative affect. Both studies in Article 2 also investigated whether the moderated mediation models were uniquely related with the characteristics of SC rather than PS Perfectionism.

In summary, despite the associations among SC perfectionism, anxiety sensitivity and experiential avoidance, this thesis considers the differential effects of being "an exception to an average" (Hayes et al., 2023, p. 1053). Specifically, this thesis was the first to examine whether different combinations of higher versus lower levels of anxiety sensitivity and experiential avoidance differentially predicted distress outcomes among individuals with greater SC perfectionism. Such investigations challenge arguments that anxiety sensitivity and experiential avoidance capture the same process and also parallels clinical work whereby targeting and

decoupling the co-occurrence of two related processes can be an important treatment goal (Hayes et al., 2023). Moreover, the present thesis also examined the applicability of the hypothesized moderated mediation models with the unique characteristics of SC versus PS perfectionism. This thesis will allow for a better understanding of the conditions under which anxiety sensitivity and experiential avoidance confer vulnerability to distress outcomes for SC perfectionistic individuals, which can inform prevention and intervention efforts that are tailored to an individual client's characteristics.

Article 1

Self-critical perfectionism and anxious and depressive symptoms over two years:

Moderated mediation models of anxiety sensitivity and experiential avoidance

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Abstract for Article 1

This three-wave longitudinal study of 297 community adults (mean age = 38.66 years, 67% female) examined how anxiety sensitivity and experiential avoidance work together to explain the relation between perfectionism and anxious and depressive symptoms over two years. Participants completed measures of self-critical (SC) and personal standards (PS) higherorder dimensions of perfectionism, anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms at Time 1. Participants completed measures of anxiety sensitivity, experiential avoidance, and symptoms again at Time 2 one year later, and symptoms measures again at Time 3 two years after baseline. Moderated mediation analyses showed that for those with higher Time 1 experiential avoidance, Time 1 SC perfectionism was indirectly related to Time 3 anxious arousal symptoms through Time 2 anxiety sensitivity. For those with moderate to higher Time 1 anxiety sensitivity, Time 1 SC perfectionism was indirectly associated with Time 3 general distress and anxious arousal symptoms through Time 2 experiential avoidance. These moderated mediation effects were not found for PS perfectionism. These results support anxiety sensitivity and experiential avoidance as moderating and mediating processes that may be important treatment targets for reducing vulnerability to anxious and depressive symptoms over the longer-term in SC perfectionistic individuals.

Keywords: perfectionism, experiential avoidance, anxiety sensitivity, anxiety, depression.

Self-Critical Perfectionism and Anxious and Depressive Symptoms Over Two Years: Moderated Mediation Models of Anxiety Sensitivity and Experiential Avoidance

Over the past three decades, perfectionism has received increasing attention as a cognitive-personality factor that increases vulnerability to a wide range of psychological problems, including anxious and depressive symptoms (see Smith et al., 2018; 2021). Factor analytic studies have established that two higher-order dimensions underlie the different perfectionism conceptualizations (e.g., Stoeber & Otto, 2006), which we refer to as personal standards (PS) and self-critical (SC) perfectionism. PS perfectionism involves the setting and pursuing of high standards and goals for oneself. SC perfectionism involves excessively harsh self-scrutiny, critical evaluations of one's own behavior, and chronic concerns about others' criticism and disapproval (see Dunkley et al., 2003). In contrast to PS perfectionism, studies have shown that SC perfectionism more strongly and consistently relates to anxious and depressive symptoms, both cross-sectionally (see Stoeber & Otto, 2006) and longitudinally (see Smith et al., 2018; 2021). SC perfectionism has also been shown to hinder the process and outcome of psychotherapy (see Blatt & Zuroff, 2005; Löw et al., 2020). As such, there is a need for research examining the mechanisms that explain why individuals with greater SC perfectionism experience more distress over time. The present study tested moderated mediation models to investigate the interactive role of anxiety sensitivity and experiential avoidance in explaining the relation between SC perfectionism and anxious and depressive symptoms over two years.

SC Perfectionism, Anxiety Sensitivity, and Distress Moderated by Experiential Avoidance

Anxiety sensitivity involves a fear of anxiety- or arousal-related symptoms (e.g., shaking, sweating) that arises due to the belief that these symptoms have negative physical, psychological, or social consequences (Reiss et al., 1986). Anxiety sensitivity is a psychological risk factor that

is theorized to contribute to individuals' distress and impairment over time because anticipating harmful consequences from one's anxious arousal exacerbates one's symptoms and leads to an intense fear of these experiences (Otto et al., 2016; Reiss et al., 1986). Indeed, two meta-analyses have found anxiety sensitivity to be consistently and robustly associated with various forms of psychopathology (see Naragon-Gainey, 2010; Olatunji & Wolitzky-Taylor, 2009).

Albert Ellis (2002) proposed that individuals higher in SC perfectionism may experience greater anxiety sensitivity due to their marked fear of criticism and intolerance for failure. He theorized that SC perfectionistic individuals fearfully react to signals of anxiety because they interpret any degree of anxious arousal as a sign of weakness, failure, or as a risk for negative evaluation from others. Empirically, studies have found that SC perfectionism measures were related to anxiety sensitivity (e.g., Cox et al., 2001; Flett et al., 2004). In a cross-sectional study of undergraduate students, anxiety sensitivity mediated the relationship between perfectionistic cognitions and symptoms of depression and anxiety (Pirbaglou et al., 2013). However, to our knowledge, there is no longitudinal research examining the role of anxiety sensitivity in explaining the relation between perfectionism and anxious and depressive symptoms over time.

Further, whether anxiety sensitivity leads to distress for individuals with higher SC perfectionism may depend on the extent to which they exhibit higher versus lower levels of experiential avoidance. Experiential avoidance involves an unwillingness to remain in contact with aversive internal experiences (e.g., thoughts, emotions, memories, bodily sensations) and subsequent efforts to alter, control, or eliminate these experiences (Hayes et al., 1996). While experiential avoidance is intended to reduce distress, and may do so in the short-term, it paradoxically increases distress in the long-term by increasing the frequency, severity, and accessibility of the exact experiences one wishes to avoid (Hayes et al., 1996). That is,

experiential avoidance may enhance the vulnerability associated with anxiety sensitivity because the refusal to remain in contact with aversive internal states may increase one's tendency to catastrophically interpret their anxious symptoms as dangerous, which enhances the fear and dysfunction associated with them over time (e.g., Kashdan et al., 2008).

Based on an integration of previous theory, we propose that individuals with higher SC perfectionism and higher experiential avoidance tend to experience greater anxiety sensitivity and distress. As an illustration, an individual with higher SC perfectionism who believes that worries get in the way of their success will tend to avoid worrying because it activates negative self-referential thoughts and feelings (e.g., "I am not good enough"). This avoidance increases their worry that there is something seriously wrong with them when they experience anxious symptoms (Blatt, 1995; Kashdan et al., 2008). On the other hand, we propose that individuals with higher SC perfectionism and lower experiential avoidance might experience lower anxiety sensitivity and distress. A SC perfectionistic individual who does not believe that emotions cause problems in their life will be better able to tolerate negative self-referential thoughts and feelings. Their lower avoidance decreases their worry that they might be going crazy when they feel anxious, allowing for greater attitudes of self-acceptance and self-compassion (Hayes et al., 2006; Moroz & Dunkley, 2019). Empirically, studies have shown that experiential avoidance strengthens, or moderates, the relationship between anxiety sensitivity and anxious and depressive symptoms (e.g., Bardeen et al., 2014; Zvolensky et al., 2015). No research has examined whether SC perfectionism interacts with experiential avoidance to predict anxiety sensitivity and distress over time.

SC Perfectionism, Experiential Avoidance, and Distress Moderated by Anxiety Sensitivity

Theory posits that individuals with higher SC perfectionism tend to engage in

experiential avoidance due to their strong desire to escape from distressing thoughts, feelings, and memories that reinforce their negative self-view (e.g., Heatherton & Baumeister, 1991). Experiential avoidance has been described as a generalized vulnerability factor and fundamental aspect of mental health that is related to anxious and depressive symptoms (see Chawla & Ostafin, 2007). Mediational studies have found that experiential avoidance explains the relation between SC perfectionism and anxious and depressive symptoms both cross-sectionally (Moroz & Dunkley, 2015; Santanello & Gardner, 2007) and longitudinally (Moroz & Dunkley, 2019). However, studies investigating the role of experiential avoidance in explaining SC perfectionistic individuals' distress have examined this construct independently and focused on its main effects.

Whether individuals with greater SC perfectionism exhibit higher versus lower levels of anxiety sensitivity might influence the vulnerability associated with experiential avoidance. The tendency to overestimate the negative consequences of anxiety is believed to amplify the aversiveness and need to escape anxiety-related symptoms (Otto et al., 2016). However, the immediate relief from avoiding such perceived negative outcomes can, in turn, strengthen negative expectancies about these experiences, further reinforce the cycle of avoidance, and exacerbate distress over time (e.g., Zvolensky & Forsyth, 2002).

Integrating previous theory, we propose that individuals with higher SC perfectionism and higher anxiety sensitivity may experience elevated experiential avoidance and distress. For example, an individual with higher SC perfectionism who fears what people might think of them when they are anxious tends to become more worried about not being able to control their worries and feelings, which increases the focus on the avoidance of their negative self-referential thoughts and feelings (e.g., "I am a failure"). The immediate relief from escaping their negative self-awareness reinforces SC perfectionistic individuals' cycle of avoidance (Zvolensky & Forsyth, 2002), which results in them giving up on pursuing behaviours in line with important goals and values (Hayes et al., 2006). Conversely, we propose that individuals with higher SC perfectionism and lower anxiety sensitivity may exhibit lower experiential avoidance and distress. A SC perfectionistic individual who does not worry that there is something seriously wrong with them when experiencing anxious symptoms will experience less negative self-evaluations. As a result, they will not believe that emotions cause problems in their life and will better tolerate aversive emotional experiences and persist in committed action (Moroz & Dunkley, 2019; Otto et al., 2016). Indeed, experiential avoidance has been found to mediate the relation between anxiety sensitivity and anxious and depressive symptoms (e.g., Stein et al., 2020). However, no research has examined whether anxiety sensitivity moderates the association between SC perfectionism, experiential avoidance, and distress.

The Present Study

The present study used a three-wave longitudinal design and combined samples from two previous studies (Moroz & Dunkley, 2019; Tobin & Dunkley, 2021) to test the moderating and mediating roles of anxiety sensitivity and experiential avoidance in explaining the link between SC perfectionism and anxious and depressive symptoms over two years. While these variables are strongly interrelated, we examined whether the range in the levels of anxiety sensitivity and experiential avoidance in SC perfectionistic individuals differentially predict distress. Indeed, it has been argued that studying the interactive effects of these constructs may advance our understanding of individuals' vulnerability for negative outcomes and have important treatment implications (e.g., Kashdan et al., 2008). Based on the theory and research we described, we built substantively on Moroz & Dunkley's (2019) study of experiential avoidance as a single mediator by testing two moderated mediation models. Model 1 tested whether the relation of Time 1 SC

perfectionism with distress symptoms at Time 3 two years later through anxiety sensitivity at Time 2 one year after baseline was conditional on differing levels of Time 1 experiential avoidance. We hypothesized that individuals with higher SC perfectionism and higher experiential avoidance would exhibit greater anxious and depressive symptoms over two years through anxiety sensitivity. Model 2 examined whether the indirect relation of Time 1 SC perfectionism with Time 3 distress symptoms through Time 2 experiential avoidance was conditional on differing levels of Time 1 anxiety sensitivity. We hypothesized that individuals with higher SC perfectionism and higher anxiety sensitivity would demonstrate greater anxious and depressive symptoms over two years through experiential avoidance.

As SC perfectionism is considered a transdiagnostic vulnerability factor (see Egan et al., 2011), we used the tripartite model of depression and anxiety (Clark & Watson, 1991) to test the relation between SC perfectionism and general distress (i.e., symptoms shared between depression and anxiety), anxiety-specific symptoms (i.e., somatic arousal) and depression-specific symptoms (i.e., anhedonia) over time. We also tested our models with PS perfectionism instead of SC to differentiate the effects of SC from PS perfectionism. We expected the models would be more specifically related to SC perfectionism, given previous findings (e.g., Stoeber & Otto, 2006). The findings from the present study may highlight the importance of targeting experiential avoidance and anxiety sensitivity through prevention or intervention efforts to bolster well-being and quality of life for individuals with higher SC perfectionism.

Method

Participants

The sample for the present study included 297 employed community adults (198 female, 99 male) from a larger sample of 362 participants who were recruited through newspaper and

online advertisements. The present sample was derived by combining two separate samples of participants who completed the same procedure for two separate studies. Participants who completed all three timepoints in either study were included in the present analyses. This included 173 participants (116 female, 57 male) from the first sample, which was used in the previously mentioned study by Moroz and Dunkley (2019). Also included were 124 participants (82 female, 42 male) from the second sample, which was used in a previous study by Tobin and Dunkley (2021) testing mindfulness and self-compassion as moderators of the relation between perfectionism and anxious and depressive symptoms over two years. Participants ranged from 18 to 65 years old with a mean age of 38.66 years (SD = 14.28). Given a bilingual population, 190 English-speaking participants (127 female, 63 male) completed English versions of the questionnaires, and 107 participants (71 female, 36 male) completed French translations. The majority of participants reported their ethnicity as European (66%, n = 197), while 14% (n = 40) identified as Asian, 7% (n = 20) as Latin American, 4% (n = 11) as African, 3% (n = 9) as East Indian, 2% (n = 5) as Middle Eastern, 1% (n = 3) as Aboriginal, 3% (n = 9) reported multiple ethnicities, and 1% (n = 3) did not specify an ethnicity.

Procedure

Participants completed measures on three separate occasions over two years. At Time 1, participants completed measures of perfectionism, anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms. At Time 2, approximately one year later (M = 12.33, SD = 0.77 months), participants repeated the measures of anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms. At Time 3, approximately two years after baseline (M = 24.29, SD = 0.72 months), participants repeated the measures of anxiety sensitivity sensitive symptoms. At Time 3, approximately two years after baseline (M = 24.29, SD = 0.72 months), participants repeated the measures of anxious and depressive symptoms. At Time 3, approximately two years after baseline (M = 24.29, SD = 0.72 months), participants repeated the measures of anxious and depressive symptoms. At Time 3, approximately two years after baseline (M = 24.29, SD = 0.72 months), participants repeated the measures of anxious and depressive symptoms.

of participants and were completed using an online link provided by Qualtrics.com for the second sample. Participants provided informed consent before participating and all procedures were approved by a human research ethics committee. Participants were compensated \$25 at each time point.

Measures

Perfectionism. SC and PS perfectionism dimensions were measured at Time 1 using the 45-item Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), the 35-item Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), the 23-item Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001), and the 66-item Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). Based on previous factor analytic findings (e.g., Dunkley, Ma, et al., 2014; Stoeber & Otto, 2006), SC perfectionism was assessed using the FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R discrepancy, and DEQ self-criticism subscales. PS perfectionism was assessed using the FMPS personal standards, HMPS self-oriented perfectionism and APS-R high standards subscales. As was done in previous studies (e.g., Dunkley, Mandel, et al., 2014; Dunkley et al., 2003), SC and PS composite scores were derived by standardizing the specific subscales and averaging z-scores to represent an integration of different theoretical and empirical conceptualizations of the perfectionism construct. Previous research supports the validity and reliability of the DEQ, FMPS, HMPS and APS-R measures (Frost et al., 1990; Hewitt & Flett, 1991; Slaney et al., 2001; Zuroff et al., 2004). Coefficient alphas for the present study for FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R discrepancy, DEQ self-criticism, FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards were .90, .87, .94, .83, .82, .90, and .87, respectively. Previous studies have supported the convergent and

discriminant validity of the higher-order perfectionism composites in hypothesized relations with other measures of personality and psychological (mal)adjustment (e.g., Stoeber & Otto, 2006). In the present study, coefficient alphas for the SC and PS perfectionism composites were .85 and .75, respectively.

Anxiety Sensitivity. Anxiety sensitivity was assessed at Time 1 and Time 2 using the 18item Anxiety Sensitivity Index–3 (ASI-3; Taylor et al., 2007). The ASI-3 asks participants to rate their level of agreement with statements about anxiety-related experiences across three factors: physical concerns (e.g., "When I notice my heart skipping a beat, I worry that there is something seriously wrong with me"), cognitive concerns (e.g., "When my thoughts seem to speed up, I worry that I might be going crazy"), and social concerns (e.g., "When I tremble in the presence of others, I fear what people might think of me"). The ASI-3 has demonstrated good internal consistency and validity (e.g., Taylor et al., 2007). Coefficient alphas for the ASI-3 in the present study were .90 and .92 at Time 1 and Time 2, respectively.

Experiential Avoidance. Experiential avoidance was assessed at Time 1 and Time 2 using the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011). The seven-item AAQ-II is a widely used measure of experiential avoidance that assesses one's willingness to remain in contact with painful internal experiences (e.g., "I worry about not being able to control my worries and feelings"). The AAQ-II has demonstrated adequate internal consistency, test-retest reliability, discriminant, convergent and predictive validity (e.g., Bond et al., 2011). Coefficient alphas for the AAQ-II in the present study were .91 at Time 1 and .92 Time 2.

Anxious and Depressive Symptoms. General and specific anxious and depressive symptoms were assessed at Time 1, Time 2, and Time 3 using the Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991). The MASQ is a 62-item self-report measure that

includes four separate scales. Two of the four scales assess the general aspects of anxious and depressive symptoms, which are referred to as general distress depressive symptoms (12 items; e.g., "Felt worthless") and general distress anxious symptoms (11 items; e.g., "Was unable to relax"). These two scales have been found to be strongly related so they were combined to reflect a measure of general distress (e.g., Tobin & Dunkley, 2021). The other two scales focus on the specific aspects of anxiety and depression, and are referred to as anxious arousal (17 items; e.g., "Was trembling or shaking") and anhedonic depression (22 items; e.g., "Felt withdrawn from other people"). The MASQ has been found to possess acceptable internal consistency and convergent and discriminant validity (Watson et al., 1995). In the present study, coefficient alphas were .93, .94 and .95 for general distress, .86, .90 and .89 for anxious arousal, and .92, .93 and .93 for anhedonic depression at Time 1, Time 2, and Time 3, respectively.

Given the study's bilingual sample, measures were available in English and French. French-speaking participants completed previously validated French translations of the perfectionism, distress, and experiential avoidance measures, for which the internal consistencies and validity have been shown to be comparable to those of the English versions (Dunkley et al., 2012; Dunkley & Kyparissis, 2008; Monestès et al., 2009). The English-version of the ASI-3 was translated into French by bilingual research assistants using forward and back-translation. The coefficient alphas for each measure were comparable for the English and French versions (difference in αs ranged from .00 to .09). We also found no significant differences in the correlations between the ASI-3 and all study measures for participants who completed the measure in English versus French. Finally, we conducted exploratory moderated mediation models with questionnaire language included as a covariate and found questionnaire language did not significantly predict the mediator or outcome for both Models 1 and 2.

Analysis

Data analysis was conducted using SPSS Statistics, version 27. The moderated mediation hypotheses were tested using Hayes' conditional process analysis via the PROCESS macro for SPSS, version 4.0, model 7 (Hayes, 2017). Conditional process analysis uses a bootstrapping procedure to estimate indirect effects (mediation) but extends on traditional mediation models by simultaneously testing whether the strength of indirect effects vary based on a moderating variable (moderation). Thus, a significant index of moderated mediation denotes that the indirect effect varies based on different levels of the moderator (Hayes, 2017). In the present study, the conditional indirect effect was examined for three levels of the moderator (at the mean and one standard deviation above and below the mean). The significance of effects was tested using biascorrected 95% confidence intervals (CI) based on 10,000 bootstrapped samples and were considered statistically significant at the p < .05 level if the 95% confidence interval did not include zero. The variables included in the interaction term were mean centered prior to analysis.

Results

Descriptive Statistics and Zero-Order Correlations

Table 1 presents the means, standard deviations, internal consistencies, and zero-order correlations for all study variables. Correlations were interpreted using Cohen's (1992) criteria for weak (r = 0.10), moderate (r = 0.30), and strong (r = 0.50) effect sizes. SC and PS perfectionism were strongly related. Anxiety sensitivity and experiential avoidance were also strongly related. In contrast to PS perfectionism, SC perfectionism was moderately to strongly related to anxiety sensitivity, experiential avoidance, general distress, anxious arousal, and anhedonic depression.

Moderated Mediation Analyses

Table 2 and Table 3 present the regression results for the moderated mediation models predicting general distress and anxious arousal for Model 1 and Model 2, respectively. The bootstrapped conditional indirect effects are shown in Figure 1 for Model 1 and in Figure 2 for Model 2. The moderated mediation results predicting anhedonic depression were not significant for both models so are not further described. Both R^2 and the squared semipartial correlation (sr^2) were included as indices of effect size. Sr^2 indicates the strength of association between the dependent variable and one of the independent variables taking into account the relationships among all the variables, where .01 = small, .09 = medium, and .25 = large effects (Cohen, 1992).

Model 1a: SC Perfectionism, Anxiety Sensitivity, and General Distress Moderated by

Experiential Avoidance. Model 1a tested whether Time 1 experiential avoidance moderated the indirect effect of Time 1 SC perfectionism on Time 3 general distress through Time 2 anxiety sensitivity. Time 1 anxiety sensitivity and general distress were included as covariates in the first regression predicting Time 2 anxiety sensitivity. Time 2 general distress was a covariate in the second regression predicting Time 3 general distress. As shown in Table 2, in the first regression analysis Time 1 anxiety sensitivity accounted for 20% of unique variance in Time 2 anxiety sensitivity (B = 0.63, SE = 0.05, p < .001). The main effects of Time 1 SC perfectionism, experiential avoidance, and general distress predicting Time 2 anxiety sensitivity were not significant. However, the interaction between Time 1 SC perfectionism and Time 1 experiential avoidance accounted for 2% of unique variance in Time 2 anxiety sensitivity and general distress. In the second set of regressions, Time 2 general accounted for 14% of unique variance in Time 3 general distress (B = 0.50, SE = 0.06, p < .001). Time 1 SC perfectionism accounted for 3% of unique variance in Time 3 general distress (B = 0.50, SE = 0.06, p < .001). Time 1 SC perfectionism accounted for 3% of unique variance in Time 3 general distress (B = 3.91, SE = 1.05, p < .001). However, Time 2

anxiety sensitivity did not uniquely predict Time 3 general distress, controlling for the effect of Time 2 general distress (B = 0.07, SE = 0.07, p = .36). As shown in Figure 1, the index of moderated mediation (.015) for Model 1a was nonsignificant (95% CI [-.019, .054]).

Model 1b: SC Perfectionism, Anxiety Sensitivity, and Anxious Arousal Moderated by *Experiential Avoidance.* Model 1b tested whether Time 1 experiential avoidance moderated the indirect effect of Time 1 SC perfectionism on Time 3 anxious arousal through Time 2 anxiety sensitivity. As shown in Table 2, in the first regression analysis the interaction between Time 1 SC perfectionism and Time 1 experiential avoidance accounted for 2% of unique variance in Time 2 anxiety sensitivity (B = 0.21, SE = 0.05, p < .001), controlling for Time 1 anxiety sensitivity and anxious arousal. In the second regression, Time 2 anxious arousal accounted for 16% of unique variance Time 3 anxious arousal (B = 0.41, SE = 0.05, p < .001). Time 1 SC perfectionism (B = 1.13, SE = 0.49, p < .05) and Time 2 anxiety sensitivity (B = 0.12, SE = 0.04, p < .01) accounted for 1% and 2% of unique variance in Time 3 anxious arousal, respectively, controlling for Time 2 anxious arousal. As shown in Figure 1, the index of moderated mediation (.025) for Model 1b was significant (95% CI [.005, .049]). Specifically, the conditional indirect effect of Time 1 SC perfectionism on Time 3 anxious arousal through Time 2 anxiety sensitivity was significant for those at higher (95% CI [0.059, 0.804]), but not lower (95% CI [-0.364, 0.111]) to moderate (95% CI [-0.046, 0.399]), levels of Time 1 anxiety sensitivity.

Model 2a: SC Perfectionism, Experiential Avoidance, and General Distress Moderated by Anxiety Sensitivity. Model 2a tested whether Time 1 anxiety sensitivity moderated the indirect effect of Time 1 SC perfectionism on Time 3 general distress through Time 2 experiential avoidance. Time 1 experiential avoidance and general distress were included as covariates in the first regression predicting Time 2 experiential avoidance. Time 2 general distress was included as a covariate in the second regression predicting Time 3 general distress. As shown in Table 3, in the first regression analysis Time 1 experiential avoidance accounted for 21% of unique variance in Time 2 experiential avoidance (B = 0.69, SE = 0.05, p < .001). Time 1 SC perfectionism accounted for 2% of unique variance in Time 2 experiential avoidance (B =1.95, SE = 0.92, p < .001). The interaction between Time 1 SC perfectionism and Time 1 anxiety sensitivity accounted for 1% of unique variance in Time 2 experiential avoidance (B = 0.10, SE =0.03, p < .01), controlling for Time 1 experiential avoidance and general distress. In the second regression, Time 2 general distress accounted for 11% of unique variance in Time 3 general distress (B = 0.46, SE = 0.06, p < .001). Time 1 SC perfectionism (B = 3.14, SE = 1.11, p < .01) and Time 2 experiential avoidance (B = 0.23, SE = 0.1, p < .05) accounted for 2% and 1% of unique variance in Time 3 general distress, respectively, controlling for Time 2 general distress. As shown in Figure 2, the index of moderated mediation (.022) for Model 2a was significant (95% CI [.001, .052]). Specifically, the conditional indirect effect of Time 1 SC perfectionism on Time 3 general distress through Time 2 experiential avoidance was significant for those at moderate (95% CI [0.003, 1.051]) to higher (95% CI [0.007, 1.577]), but not lower (95% CI [-0.114, 0.630]), levels of Time 1 anxiety sensitivity.

Model 2b: SC Perfectionism, Experiential Avoidance, and Anxious Arousal Moderated by Anxiety Sensitivity. Model 2b examined whether Time 1 anxiety sensitivity moderated the indirect effect of Time 1 SC perfectionism on Time 3 anxious arousal through Time 2 experiential avoidance. In the first regression analysis shown in Table 3, the interaction between Time 1 SC perfectionism and Time 1 anxiety sensitivity accounted for 1% of unique variance in Time 2 experiential avoidance (B = 0.09, SE = 0.03, p < .01), controlling for Time 1 experiential avoidance and anxious arousal. In the second set of regressions, Time 2 anxious arousal accounted for 18% of unique variance in Time 3 anxious arousal (B = 0.43, SE = 0.05, p < .001). Time 2 experiential avoidance accounted for 2% unique variance in Time 3 anxious arousal (B = 0.15, SE = 0.05, p < .01), controlling for Time 2 anxious arousal. As shown in Figure 2, the index of moderated mediation (.014) for Model 2b was significant (95% CI [.002, .032]). The conditional indirect effect of Time 1 SC perfectionism on Time 3 anxious arousal through Time 2 experiential avoidance was significant for those at moderate (95% CI [0.051, 0.603]) to higher (95% CI [0.089, 0.934]), but not lower (95% CI [-0.064, 0.361]), levels of Time 1 anxiety sensitivity.

Supplementary Analyses

Moderated Mediation Analyses with PS Perfectionism. To examine the specificity of our results with SC perfectionism, we tested our moderated mediation models with PS perfectionism included in the models instead of SC when predicting general distress and anxious arousal. Results are presented in the appendix (see Tables A1, A2 and Figures A1, A2). When predicting general distress, the index of moderated mediation and all conditional indirect effects were nonsignificant for both models. When predicting anxious arousal, the index of moderated mediation (.019) for Model 1 was significant (95% CI [.001, .040]), but the conditional indirect effects of Time 1 PS perfectionism on Time 3 anxious arousal through Time 2 anxiety sensitivity were all nonsignificant. For Model 2, the index of moderated mediation and the conditional indirect effects predicting Time 3 anxious arousal were all nonsignificant.

Moderated Mediation Analyses with Anxiety Sensitivity Subscales. To better understand the role of anxiety sensitivity in the moderated mediation models, we repeated our analyses replacing the anxiety sensitivity total score with each of the three subscales: physical concerns, cognitive concerns, and social concerns. Results are presented in the appendix for anxiety sensitivity physical concerns (see Tables A3, A4 and Figures A3, A4), cognitive concerns (see Tables A5, A6 and Figures A5, A6), and social concerns (see Tables A7, A8 and Figures A7, A8). Model 1 results showed that experiential avoidance significantly moderated the indirect effect of SC perfectionism on anxious arousal over two years through each of physical concerns and cognitive concerns. Model 2 results showed that each of physical concerns and social concerns moderated the indirect effect of SC perfectionism on both general distress and anxious arousal through experiential avoidance. These findings suggest that the moderated mediation relations of Model 1 and Model 2 apply to multiple dimensions of anxiety sensitivity, which further supports focusing on the anxiety sensitivity total score.

Discussion

The present three-wave longitudinal study of community adults was the first to examine anxiety sensitivity and experiential avoidance as moderators and mediators that explain SC perfectionistic individuals' vulnerability to anxious and depressive symptoms over time. Our first moderated mediation model showed that higher SC perfectionism in combination with higher experiential avoidance was indirectly related to anxious arousal over two years through anxiety sensitivity. Our second moderated mediation model showed that the combination of higher SC perfectionism and moderate to higher anxiety sensitivity was indirectly associated with general distress and anxious arousal over two years through experiential avoidance. A strength of the study was that the findings were cross-language and cross-cultural to at least a certain extent.

Our moderated mediation results with Model 1 showed that experiential avoidance enhances the vulnerability associated with anxiety sensitivity over time for individuals higher in SC perfectionism. While SC perfectionism was strongly correlated with experiential avoidance, this did not preclude the possibility of there being a range in the levels of experiential avoidance among individuals with higher SC perfectionism that uniquely predicted anxiety sensitivity and distress. Specifically, Time 1 SC perfectionism and experiential avoidance interacted to predict increases in anxiety sensitivity over one year, from Time 1 to Time 2. Time 2 anxiety sensitivity, in turn, mediated the association between Time 1 SC perfectionism and anxious arousal over two years from Time 1 to Time 3 for individuals with higher, but not lower or moderate, experiential avoidance. Our findings with Model 1 extend previous cross-sectional research (e.g., Pirbaglou et al., 2013) by showing that anxiety sensitivity only explained SC perfectionistic individuals' vulnerability to anxious arousal over time among those who had an unwillingness to experience aversive internal events (e.g., thoughts, feelings). This is in line with previous theory (e.g., Kashdan et al., 2008) and research (e.g., Bardeen, 2015) that proposes the vulnerability linked to anxiety sensitivity depends on how one responds to these feared states, such that avoidance of one's fears maintains and exacerbates the distress and dysfunction associated with them.

To illustrate our Model 1 findings, an individual who is higher in SC perfectionism and worries about not being able to control their feelings will tend to avoid them and any negative self-awareness (e.g., "I am weak"). Their avoidance heightens their fears that they might be going crazy when they experience anxious symptoms (Kashdan et al., 2008; Moroz & Dunkley, 2019). Conversely, a SC perfectionistic individual who does not believe that worries get in the way of their success is more willing to tolerate such experiences and any associated negative self-referential thoughts and feelings. Their lower avoidance results in them worrying less that something is seriously wrong with them when they experience anxious symptoms, which promotes greater attitudes of self-acceptance and self-compassion (Hayes et al., 2006; Moroz & Dunkley, 2019).

Our moderated mediation results with Model 2 highlight an alternative process whereby anxiety sensitivity enhances the vulnerability associated with experiential avoidance over time for SC perfectionistic individuals. Despite a strong relation between SC perfectionism and anxiety sensitivity, this did not preclude there being a range in the levels of anxiety sensitivity among individuals with higher SC perfectionism that was unique in the prediction of experiential avoidance and distress. Specifically, the interaction between Time 1 SC perfectionism and anxiety sensitivity predicted increases in experiential avoidance over one year, from Time 1 to Time 2. Time 2 experiential avoidance, in turn, mediated the relation between Time 1 SC perfectionism and Time 3 general distress and anxious arousal two years later for individuals with moderate to higher, but not lower, levels of Time 1 anxiety sensitivity. Our Model 2 findings extend previous research supporting experiential avoidance as a mediator in the relation between SC perfectionism and anxious and depressive symptoms over time (e.g., Moroz & Dunkley, 2019) by highlighting that experiential avoidance only explained SC perfectionistic individuals' anxious and depressive symptoms over time among those who endorsed moderate to higher fears of anxious arousal. This finding is in line with notions that the tendency to overestimate the negative consequences of anxiety amplifies one's motivation to avoid or escape such symptoms (e.g., Otto et al., 2016).

To illustrate our Model 2 findings, an individual who is higher in SC perfectionism and fears people will think negatively of them when experiencing anxious symptoms will be more likely to believe that emotions cause problems in their life, increasing their focus on the avoidance of negative self-referential thoughts and feelings (e.g., "I am worthless"; Heatherton & Baumeister, 1991; Otto et al., 2016). Their avoidance hinders their ability to persist in behaviours in line with important goals and values (Hayes et al., 2006). Conversely, an

individual higher in SC perfectionism who is not worried that something is terribly wrong with them when experiencing anxious symptoms will experience less negative self-descriptions and will be less worried about being able to control their worries and feelings, allowing them to more flexibly observe and tolerate such experiences and persist in committed action (Hayes et al., 2006; Moroz & Dunkley, 2019).

The different pattern of results across the general distress, anxious arousal, and anhedonic depression outcomes also imply some important differences in the role of anxiety sensitivity and experiential avoidance in explaining SC perfectionistic individuals' vulnerability to distress. Our findings with Model 1 suggest that anxiety sensitivity may be most relevant in explaining SC perfectionistic individuals' anxious symptoms specifically, as SC perfectionistic individuals' fears of anxious arousal did not mediate their vulnerability to general distress or anhedonic depression symptoms over two years. Conversely, our results with Model 2 support experiential avoidance as a broader transdiagnostic risk factor, such that the unwillingness to remain in contact with distressing internal experiences explained risk across general distress and anxious arousal for individuals with higher SC perfectionism (see Chawla & Ostafin, 2007). These findings are in line with conceptualizations of experiential avoidance as a broader, higher order factor of psychological health that incorporates a pattern of responding to all forms of internal events (e.g., thoughts, emotions, memories, bodily sensations; Kashdan & Rottenberg, 2010), while anxiety sensitivity represents a more specific, lower-order factor of distress intolerance that involves arousal-related (i.e., anxiety) sensations specifically (e.g., Mitchell et al., 2013). Thus, our results suggest that anxiety sensitivity may be related to SC perfectionistic individuals' fears of weakness, failure, and loss of control, which in turn explains their vulnerability to anxious arousal specifically. On the other hand, experiential avoidance might relate to both SC

perfectionistic individuals' anxious fears of weakness and loss of control, as well as depressive themes of helplessness, withdrawal and defeat, which in turn explains their vulnerability to both anxious and depressive symptoms over time (e.g., Blatt, 1995; Dunkley et al., 2020).

In contrast to our findings with SC perfectionism, PS perfectionism was unrelated or weakly related to anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms. Further, both moderated mediation models were not significant when tested with PS perfectionism. Our findings are consistent with a broader literature that establishes SC perfectionism as the more maladaptive dimension of perfectionism (see Stoeber & Otto, 2006). Our results suggest that having higher personal standards does not make individuals more prone to greater anxiety sensitivity and experiential avoidance. Rather, the negative self-evaluative features of SC perfectionism appear to be responsible for perpetuating anxiety sensitivity, experiential avoidance, and anxious and depressive symptoms over time.

Clinical Implications

The clinical implications of these findings are important to consider given the finding that individuals higher in SC perfectionism are poor responders to traditional treatments and show resistance when their perfectionism is addressed directly in therapy (e.g., Löw et al., 2020). Our Model 1 findings suggest that interventions aimed at decreasing experiential avoidance in SC perfectionistic individuals' may be beneficial in reducing their anxiety sensitivity and anxious arousal over time. Interventions from third-wave therapies, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) and Dialectical Behavior Therapy (DBT; Linehan, 1993) aim to reduce experiential avoidance by teaching individuals to nonjudgmentally accept, rather than reject or control, negative internal events while committing to effective, values-informed action. Interventions from these approaches, such as mindfulness, distress tolerance, and cognitive defusion, might help individuals with greater SC perfectionism reduce their experiential avoidance by changing their response to negative internal events.

Our Model 2 findings suggest that interventions aimed at decreasing SC perfectionistic individuals' anxiety sensitivity may be beneficial at reducing their experiential avoidance and anxious and depressive symptoms. Research supports the efficacy of cognitive-behavioural interventions (see Smits et al., 2008), as well as third-wave interventions (e.g., Arch et al., 2012), in reducing anxiety sensitivity. Individuals higher in SC perfectionism may benefit from traditional cognitive-behavioural interventions, such as exposure, that focus on accepting and tolerating distressing arousal-related sensations while modifying dysfunctional beliefs about such sensations and their associated beliefs about the negative consequences of imperfections. In addition, strategies from third-wave approaches may reduce SC perfectionistic individuals' anxiety sensitivity by changing their relationship with negative internal events and fostering greater attitudes of self-acceptance in response to their anxious symptoms without directly confronting their perfectionistic beliefs. These suggestions align with Tobin and Dunkley's (2021) finding that SC perfectionism combined with higher mindfulness and self-compassion relates to lower anxious and depressive symptoms over time.

Limitations and Future Directions

Although the present longitudinal study was an advance over previous research, it is imperative to acknowledge limitations of this study and future directions. First, the present study used self-report measures, which are susceptible to memory biases and distortions (e.g., Moskowitz, 1986). Future research should replicate these findings using alternative methods, such as daily diaries and experience sampling methods that require less retrospection. Second, the AAQ-II was used to assess experiential avoidance in the present study, which has been criticized for being closely related to distress (e.g., Rochefort et al., 2018). Future research should replicate our findings using alternative assessments of experiential avoidance. Third, given that our study sample consisted of nonclinical community adults, the majority of which were female and Caucasian, future research should examine the generalizability of our findings to male, racial/ethnic minority, and clinical samples (e.g., individuals with anxiety and/or mood disorders). Finally, research is needed that tests the effectiveness of therapies that target anxiety sensitivity and experiential avoidance in reducing anxious and depressive symptoms in individuals with higher SC perfectionism.

Conclusion

The present study demonstrated how anxiety sensitivity and experiential avoidance moderate and mediate vulnerability of individuals with higher SC perfectionism to anxious and depressive symptoms over time. Moderated mediation analyses demonstrated that anxiety sensitivity mediated the association between SC perfectionism and anxious arousal over two years among individuals with higher experiential avoidance. In addition, experiential avoidance mediated the relation between SC perfectionism and symptoms of either general distress or anxious arousal over two years among individuals with moderate to higher anxiety sensitivity. This study suggests the importance of moving beyond main effects analyses when examining the effects of psychological vulnerability factors to consider how psychological vulnerabilities work together, which may benefit the individualized treatment of depression and anxiety.

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Tables for Article 1

Table 1

Bivariate Correlations, Means, Standard Deviations and Internal Consistencies for Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Time 1															
1. SC Perfectionism	.85														
2. PS Perfectionism	.51***	.75													
3. Anx. Sensitivity	.53***	.22***	.90												
4. Exp. Avoidance	.65***	.11	.59***	.91											
5. General Distress	.56***	.18**	.55***	.62***	.93										
6. Anxious Arousal	.36***	.11	.55***	.45***	.66***	.86									
7. Anh. Depression	.51***	03	.40***	.55***	.57***	.31***	.92								
Time 2															
8. Anx. Sensitivity	.49***	.18**	.72***	.55***	.47***	.49***	.35***	.92							
9. Exp. Avoidance	.62***	.13*	.51***	.80***	.53***	.40***	.49***	.64***	.92						
10. General Distress	.50***	.14*	.40***	.54***	.55***	.41***	.38***	.55***	.64***	.94					
11. Anxious Arousal	.24***	.06	.26***	.33***	.28***	.46***	.11	.47***	.44***	.69***	.93				
12. Anh. Depression	.48***	.04	.31***	.51***	.37***	.25***	.59***	.37***	.56***	.62***	.36***	.93			
Time 3															
13. General Distress	.47***	.06	.34***	.50***	.59***	.41***	.46***	.41***	.51***	.60***	.37***	.45***	.95		
14. Anxious Arousal	.33***	.06	.35***	.41***	.45***	.64***	.29**	.46***	.45***	.48***	.57***	.33***	.69***	.89	
15. Anh. Depression	.40***	02	.20***	.41***	.37***	.21***	.58***	.26***	.43***	.37***	.20***	.59***	.67***	.39***	.93
M	-0.03	0.03	17.23	14.36	43.31	23.23	55.48	16.67	13.44	43.88	23.94	56.83	43.50	23.70	57.25
SD	0.86	0.89	12.19	9.64	14.89	7.31	14.37	12.88	9.70	15.30	8.75	14.94	16.40	7.97	15.22

Note. N = 297

SC = Self-critical. PS = Personal standards. Anx. = Anxiety. Exp. = Experiential. Anh. = Anhedonic Cronbach alphas are presented in bold on the diagonal. * p < .05; ** p < .01; *** p < .001.

Table 2

T2 Anxiety Sensitivity T3 General Distress SE 95% CI sr^2 95% CI sr^2 B B SE Model 1a T1 SC Perfectionism (X) 1.08 0.80 .002 3.91*** [1.85, 5.97] .029 [-0.48, 2.65]1.05 T1 Exp. Avoidance (W) 0.11 0.08 [-0.04, 0.27].003 - $X \times W$ 0.22*** 0.05 [0.11, 0.33].024 T1 Anxiety Sensitivity 0.63*** 0.05 [0.52, 0.74].204 **T1** General Distress 0.02 0.05 [-0.06, 0.11].000 _ T2 Anxiety Sensitivity (M) [-0.08, 0.21].002 0.07 0.07 ---0.50*** T2 General Distress 0.06 [0.38, 0.62].138 _ --20.39*** Constant [-0.44, 7.65]2.58 [15.32, 25.46] 3.60 2.06 -- $R^2 = .57, F(5, 291) = 76.85^{***}$ $R^2 = .40, F(3, 293) = 64.51^{***}$ T2 Anxiety Sensitivity T3 Anxious Arousal В SE sr^2 В SE sr^2 Model 1b 95% CI 95% CI T1 SC Perfectionism (X) 1.16 0.78 [-0.37, 2.68].003 1.13* 0.49 [0.17, 2.09].011 T1 Exp. Avoidance (W) .003 0.08 [-0.04, 0.26]0.11 $X \times W$ 0.21*** 0.05 [0.10, 0.32].022 _ _ T1 Anxiety Sensitivity 0.60*** 0.06 .164 [0.48, 0.71]_ -**T1** Anxious Arousal 0.16 0.08 [-0.01, 0.32].005 [0.05, 0.19] .023 T2 Anxiety Sensitivity (M) _ 0.12** 0.04 -_ T2 Anxious Arousal 0.41*** 0.05 [0.32, 0.50].158 ---1.86 11.90*** Constant 1.66 [-2.01, 5.32]1.10 [9.73, 14.07]- $R^2 = .57, F(5, 291) = 78.38^{***}$ $R^2 = .38, F(3, 293) = 61.07^{***}$

Note. T1 = Time 1. T2 = Time 2. T3 = Time 3. SC = Self-critical. Exp. = Experiential. X = Independent variable. W = Moderating variable. M = Mediating variable. $X \ge W$ = Interaction between independent and moderating variable. * p < .05; ** p < .01; *** p < .001.

Table 3

T3 General Distress T2 Experiential Avoidance SE 95% CI sr^2 sr^2 Model 2a B B SE 95% CI T1 SC Perfectionism (X) 0.52 3.14** .016 1.95*** [0.92, 2.97].016 1.11 [0.95, 5.33]T1 Anxiety Sensitivity (W) -0.01 0.04 [-0.08, 0.06].000 _ $X \times W$ 0.10** 0.03 [0.04, 0.16].011 _ **T1** Experiential Avoidance 0.69*** 0.05 [0.59, 0.79].205 _ **T1** General Distress 0.00 0.03 [-0.06, 0.06].000 _ T2 Exp. Avoidance (M) 0.23* [0.01, 0.45].009 0.11 ---T2 General Distress 0.46*** 0.06 [0.33, 0.59].106 -_ 2.97* 20.19*** [15.15, 25.23] Constant [0.40, 5.55]2.56 1.31 -- $R^2 = .67, F(5, 291) = 120.02^{***}$ $R^2 = .40, F(3, 293) = 66.45^{***}$ T2 Experiential Avoidance T3 Anxious Arousal В SE sr^2 SE sr^2 Model 2b 95% CI B 95% CI 1.95*** T1 SC Perfectionism (X) 0.51 [0.95, 2.95].016 0.92 0.54 [-0.15, 1.99].006 [-0.09, 0.06]T1 Anxiety Sensitivity (W) -0.01 0.04 .000 $X \times W$ 0.09** 0.03 [0.03, 0.15].010 _ _ 0.69*** **T1** Experiential Avoidance 0.05 .223 [0.59, 0.78]-T1 Anxious Arousal 0.02 0.05 [-0.09, 0.12].000 .017 T2 Exp. Avoidance (M)_ 0.15** 0.05 [0.05, 0.25] _ -T2 Anxious Arousal 0.43*** 0.05 [0.33, 0.52].176 ---Constant 2.70 1.38 [-0.01, 5.42]11.51*** 1.13 [9.28, 13.74]- $R^2 = .67, F(5, 291) = 120.07^{***}$ $R^2 = .38, F(3, 293) = 59.70^{***}$

Moderated Mediation Model 2 Characteristics Predicting Time 3 General Distress and Anxious Arousal

Note. T1 = Time 1. T2 = Time 2. T3 = Time 3. SC = Self-critical. Exp. = Experiential. X = Independent variable. W = Moderating variable. M = Mediating variable. $X \ge W$ = Interaction between independent and moderating variable. * p < .05; ** p < .01; *** p < .001.
Figure 1

Moderated Mediation Model 1 and Conditional Indirect Effects



Lower Experiential Avoidance (-1 SD): Mean Experiential Avoidance: Index of Moderated Mediation:

B = -0.069, SE = 0.122, 95% CI [-0.361, 0.140] *B* = 0.073, SE = 0.129, 95% CI [-0.112, 0.403] Higher Experiential Avoidance (+1 SD); B = 0.214, SE = 0.285, 95% CI [-0.276, 0.861] B = 0.015, SE = 0.018, 95% CI [-0.019, 0.054]





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model 1a) or anxious arousal (Model 1b) through Time 2 anxiety sensitivity and moderated by Time 1 experiential avoidance. * p < .05; ** p < .01; *** p < .001.

Figure 2

Moderated Mediation Model 2 and Conditional Indirect Effects





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relation between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model 2a) or anxious arousal (Model 2b) through Time 2 experiential avoidance and moderated by Time 1 anxiety sensitivity. * p < .05; ** p < .01; *** p < .001.

Bridge to Article 2

Article 1 examined whether different combinations of higher versus lower levels of anxiety sensitivity and experiential avoidance combined to differentially predict vulnerability to depressive and anxious symptoms among perfectionistic individuals over time. Specifically, Article 1 examined whether two hypothesized moderated mediation models of anxiety sensitivity and experiential avoidance explained the longitudinal relation among the self-critical (SC) and personal standards (PS) perfectionism dimensions and anxious and depressive symptoms over two years in a sample of 297 community adults. Results with Model 1 showed Time 2 anxiety sensitivity mediated the link between Time 1 SC perfectionism and Time 3 anxious arousal symptoms among individuals with higher, but not lower or moderate, Time 1 experiential avoidance. Results with Model 2 showed that Time 2 experiential avoidance mediated the link between Time 1 SC perfectionism and Time 3 general distress and anxious arousal symptoms for those with moderate to higher, but not lower, Time 1 anxiety sensitivity. These moderated mediation effects were not found with PS perfectionism. Thus, Article 1 demonstrated that anxiety sensitivity and experiential avoidance represent important mechanisms explaining SC perfectionistic individuals' vulnerability to distress over time. Further, the vulnerability associated with these self-regulatory vulnerabilities was conditional on individuals' tendencies towards both processes.

Article 2 aimed to replicate and extend the findings from Article 1 by examining the relations among SC perfectionism, anxiety sensitivity, experiential avoidance, and negative outcomes in the context of different stressful situations in daily living. Specifically, Article 2 included two studies that tested the same moderated mediation models as Article 1 predicting the maintenance of daily negative affect across two studies of community adults. Study 1 utilized an

experience sampling methodology and measured daily experiential avoidance and daily negative affect by aggregating five within-day reports completed across eight consecutive days. Study 2 used a daily diary method and assessed daily experiential avoidance, daily anxiety sensitivity, and daily negative affect by aggregating daily reports completed at bedtime over 14 consecutive days. This procedure addresses the methodological limitations of recall biases and memory distortions inherent to retrospective summary reports. Article 2 aimed to provide additional support for anxiety sensitivity and experiential avoidance as moderators and mediators of the relation between SC perfectionism and the maintenance of daily negative affect.

Article 2

Self-critical perfectionism and the maintenance of daily negative affect:

Two moderated mediation studies of anxiety sensitivity and experiential avoidance

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Abstract

Two studies of community adults examined moderated mediation models of anxiety sensitivity and experiential avoidance in explaining the association between self-critical (SC) and personal standards (PS) dimensions of perfectionism and the maintenance of daily negative affect. In Study 1 (N = 146, mean age = 36.99 years, 63% female), participants completed selfreport questionnaires assessing perfectionism and anxiety sensitivity and then completed an experience sampling procedure consisting of five within-day reports that assessed experiential avoidance and negative affect over eight consecutive days. In Study 2 (N = 154, mean age = 32.38 years, 71% female), participants completed self-report questionnaires assessing perfectionism and then completed one daily diary for 14 consecutive days assessing anxiety sensitivity, experiential avoidance, and negative affect. In both Study 1 and Study 2, moderated mediation analyses showed that aggregated daily experiential avoidance across many stressors strengthened the indirect effect of SC perfectionism on aggregated daily negative affect through anxiety sensitivity. Experiential avoidance also moderated the indirect effect of PS perfectionism on daily negative affect through anxiety sensitivity in Study 1, but these results were not replicated in Study 2. In contrast, anxiety sensitivity did not moderate the indirect effect of SC or PS perfectionism on daily negative affect through experiential avoidance. Our findings across both studies suggest that experiential avoidance across different stressful situations in daily life enhances the vulnerability associated with anxiety sensitivity for SC perfectionistic individuals, thereby highlighting the importance of individualized treatment initiatives that target daily experiential avoidance to reduce the maintenance of negative mood.

Keywords: perfectionism, experiential avoidance, anxiety sensitivity, negative affect, experience sampling method, daily diary.

Self-Critical Perfectionism and the Maintenance of Daily Negative Affect: Two Moderated Mediation Studies of Anxiety Sensitivity and Experiential Avoidance

Over the past three decades, research has demonstrated that perfectionism is an important transdiagnostic vulnerability factor for a variety of negative outcomes, including depression and anxiety (see Egan et al., 2011; Smith et al., 2018; 2021). Factor analytic studies of the different perfectionism conceptualizations (e.g., Dunkley et al., 2003; Stoeber & Otto, 2006) have established perfectionism as a multidimensional construct with two higher-order dimensions, which we refer to as personal standards (PS) and self-critical (SC) perfectionism. PS perfectionism involves the setting and pursuit of high standards and goals for oneself. SC perfectionism involves excessively harsh self-scrutiny, critical evaluations of one's own behavior, and chronic concerns about others' criticism and disapproval (see Dunkley et al., 2003). Studies have shown robust and consistent associations between SC perfectionism and depressive and anxious symptoms (e.g., Dunkley et al., 2006). Further, SC perfectionism has been associated with greater daily negative affect and lower daily positive affect (e.g., Dunkley, Ma, et al., 2014). Conversely, PS perfectionism typically exhibits weak or negligible associations with maladaptive outcomes, but has been found to interact with other variables, such as stress, to predict negative affect (e.g., Dunkley, Mandel, et al., 2014).

To understand why individuals higher in SC perfectionism experience chronic negative mood, research is needed that examines how individuals higher in SC perfectionism typically respond to situations that occur on a daily basis. Research suggests that daily stressors associated with the routine challenges of day-to-day living account for greater variance in distress than major life events (Almeida, 2005; Pillow et al., 1996). Indeed, daily stress reactivity mediated the association between SC perfectionism and depressive and anxious symptoms over a period of four years (Mandel et al., 2015). Self-regulatory mechanisms, which involve the ways individuals react to and manage emotional reactivity, have been proposed as an explanatory mechanism in the relation between personality and distress (e.g., Bijttebier et al., 2009). The present two studies of community adults tested moderated mediation models of two selfregulatory mechanisms, namely anxiety sensitivity and experiential avoidance, in explaining the association between SC perfectionism and the maintenance of daily negative affect using experience sampling (Study 1) and daily diary (Study 2) methods.

SC Perfectionism, Anxiety Sensitivity, and Distress Moderated by Experiential Avoidance

Anxiety sensitivity involves a fear of anxiety- or arousal-related symptoms (e.g., shaking, sweating) that arises due to the belief that these symptoms have negative physical, psychological, or social consequences (Reiss et al., 1986). Anxiety sensitivity has been conceptualized as a psychological risk factor, with two meta-analyses finding anxiety sensitivity to be consistently and robustly associated with various forms of psychopathology (see Naragon-Gainey, 2010; Olatunji & Wolitzky-Taylor, 2009). Anxiety sensitivity is theorized to contribute to individuals' distress and impairment over time because anticipating negative consequences from anxious arousal exacerbates one's symptoms and leads to an intense fear of these experiences (Otto et al., 2016; Reiss et al., 1986). Albert Ellis (2002) proposed that individuals with greater SC perfectionism may experience greater anxiety sensitivity due to their marked fear of criticism and intolerance for failure. He theorized that SC perfectionistic individuals fearfully react to signals of anxiety because they interpret any degree of anxious arousal as a sign of weakness, failure, loss of control, or as a risk for negative evaluation from others. Empirically, studies have found that SC perfectionism measures were positively related to anxiety sensitivity (e.g., Cox et al., 2001; Flett et al., 2004). In a cross-sectional study of undergraduate students, anxiety

sensitivity mediated the relationship between perfectionistic cognitions and symptoms of depression and anxiety (Pirbaglou et al., 2013).

Theory and research suggest that whether anxiety sensitivity leads to distress for individuals with higher SC perfectionism might depend on the extent to which they engage in experiential avoidance (e.g., Bardeen, 2015; Richard & Dunkley, 2024). Experiential avoidance involves an unwillingness to remain in contact with aversive internal experiences (e.g., thoughts, emotions, memories, bodily sensations) and subsequent efforts to alter, control, or eliminate these experiences (Hayes et al., 1996). While experiential avoidance may reduce distress in the shorter-term, controlling unwanted sensations may paradoxically increase distress in the longerterm by increasing the frequency, severity, and accessibility of the exact experiences one wishes to avoid (Hayes et al., 1996; Kashdan et al., 2008). Based on an integration of previous theory, we propose that individuals with higher SC perfectionism and higher experiential avoidance may experience elevated anxiety sensitivity and distress because their rigid and persistent avoidance of negative self-referential thoughts and feelings increases feelings of weakness, failure, and loss of control that accompany their anxious symptoms (Blatt, 1995; Kashdan et al., 2008; Richard & Dunkley, 2024). On the other hand, we propose that individuals with higher SC perfectionism and lower experiential avoidance might experience lower anxiety sensitivity and distress because they will be better able to accept and tolerate negative self-referential thoughts and feelings, which decreases their fears of anxiety and allows for attitudes of self-acceptance and selfcompassion (Hayes et al., 2006; Moroz & Dunkley, 2019).

Empirically, some studies have demonstrated that experiential avoidance strengthens, or moderates, the relationship between anxiety sensitivity and anxious and depressive symptoms (e.g., Bardeen et al., 2014; Zvolensky et al., 2015). However, little research has examined the

role of SC perfectionism in the association between anxiety sensitivity, experiential avoidance, and distress. An exception was a study by Richard and Dunkley (2024) that tested moderated mediation models. They found that for those with higher baseline levels of experiential avoidance, SC perfectionism was indirectly related to anxious arousal symptoms two years later through anxiety sensitivity, whereas the mediating effect of anxiety sensitivity was not significant for those with lower to moderate levels of experiential avoidance. Further research is needed to examine how different levels of anxiety sensitivity and experiential avoidance combine in daily living to differentially predict the maintenance of greater negative affect among individuals with greater SC perfectionism.

SC Perfectionism, Experiential Avoidance, and Distress Moderated by Anxiety Sensitivity

Experiential avoidance is another self-regulatory vulnerability that has been examined as an explanatory mechanism in the relation between SC perfectionism and distress. Experiential avoidance has been described as a generalized vulnerability factor and a fundamental aspect of mental health that is related to anxious and depressive symptoms (see Chawla & Ostafin, 2007). Theory proposes that individuals with higher SC perfectionism tend to engage in experiential avoidance due to their strong desire to escape from distressing thoughts, feelings, and memories that reinforce their negative self-awareness (e.g., Moroz & Dunkley, 2019). Mediational studies have found that experiential avoidance explains the relation between SC perfectionism and depressive and anxious symptoms both cross-sectionally (Moroz & Dunkley, 2015; Santanello & Gardner, 2007) and longitudinally (Moroz & Dunkley, 2019).

It is also possible that anxiety sensitivity may enhance the vulnerability associated with experiential avoidance for individuals with higher SC perfectionism. Indeed, the tendency to overestimate the negative consequences of anxiety has been conceptualized to amplify the aversiveness and need to escape anxiety-related symptoms (Otto et al., 2016). Based on an integration of previous theory, we propose that individuals with higher SC perfectionism and higher anxiety sensitivity may experience elevated experiential avoidance and distress because their anxious symptoms activate fears of negative evaluation and loss of control, which increases the need to escape such distressing experiences. The immediate relief from escaping their negative self-awareness reinforces SC perfectionistic individuals' cycle of avoidance (Zvolensky & Forsyth, 2002), which results in them giving up on pursuing behaviours that are in line with important goals and values (e.g., Hayes et al., 2006; Otto et al., 2016). Conversely, we propose that individuals with higher SC perfectionism and lower anxiety sensitivity may exhibit lower experiential avoidance and distress because they will experience less negative self-awareness when experiencing anxiety, allowing them to better tolerate such experiences in order to persist in committed action (e.g., Moroz & Dunkley, 2019; Richard & Dunkley, 2024). Richard and Dunkley (2024) tested longitudinal moderated mediation models and found that anxiety sensitivity moderated the indirect effect of SC perfectionism on depressive and anxious symptoms over two years through experiential avoidance. Specifically, experiential avoidance explained the relation between SC perfectionism and depressive and anxious symptoms over two years for individuals with moderate to higher, but not lower, baseline anxiety sensitivity.

Although Richard and Dunkley's (2024) study supported both moderated mediation models over the longer term, a methodological limitation of the study is that anxiety sensitivity and experiential avoidance were assessed using retrospective, dispositional self-report measures that require participants to summarize their tendencies over time and across situations. Retrospective summary measures tend to be more biased and prone to recall distortions and oneoccasion assessments may not capture how anxiety sensitivity and experiential avoidance are manifested in daily living (i.e., on a situation-by-situation basis; Moskowitz, 1986; Schwartz et al., 1999). Research using repeated situational measurements is needed to show how anxiety sensitivity and experiential avoidance tendencies are manifested across many different real-life contexts to explain the maintenance of greater daily negative affect in individuals with higher SC perfectionism.

The Present Research

The present research examined the moderating and mediating roles of anxiety sensitivity and experiential avoidance in explaining the association between SC perfectionism and the maintenance of daily negative affect in two samples of community adults. The two studies aimed to extend Richard and Dunkley's (2024) longitudinal moderated mediation findings by studying these tendencies in daily living. Specifically, the present studies utilized experience sampling (Study 1) and daily diary (Study 2) methods to examine whether anxiety sensitivity and experiential avoidance tendencies combine together across many different daily situations to maintain greater daily negative mood for individuals with higher SC perfectionism. Given that individuals regulate their internal experiences on a situation-by-situation basis, the utilization of repeated, situational assessments in the present studies allowed for a more ecologically valid and clinically relevant understanding of SC perfectionistic individuals' daily tendencies that maintain negative mood. This approach mirrors how therapists in traditional and third-wave cognitivebehavioural therapies gather records of patients' thoughts, feelings and behaviours across many situations in daily life to develop explanatory conceptualizations about the maintenance factors that perpetuate negative mood (Kuyken et al., 2009; Persons, 2012).

Study 1 utilized an experience sampling methodology (ESM) where participants were asked to complete five repeated within-day reports across eight days to obtain situational measures of experiential avoidance and negative affect. Previous analyses of this dataset showed that when SC perfectionistic individuals used more experiential avoidance during the day, they experienced greater decreases in subsequent negative affect two-to-three hours later (Dunkley et al., 2024). However, I expect that the repeated use of experiential avoidance across time and many different stressful situations will paradoxically increase distress, as has been shown in previous research (e.g., Wenzlaff & Wegner, 2000). Accordingly, in the present research, each participant's responses were aggregated across situations (i.e., within-day records) and time (i.e., days), which allowed for more reliable and ecologically valid trait-like measures of experiential avoidance and affect compared to retrospective self-report measures that summarize these tendencies over time (e.g., the past week) and across situations (Moskowitz, 1986; Schwartz et al., 1999). The two moderated mediation models from Richard and Dunkley (2024) were tested predicting daily negative affect. Model 1 tested whether the association between SC perfectionism and daily negative affect through anxiety sensitivity was moderated by daily experiential avoidance. We hypothesized that individuals with higher SC perfectionism and higher experiential avoidance would exhibit greater negative affect through anxiety sensitivity. Model 2 tested whether the indirect relation of SC perfectionism and daily negative affect through daily experiential avoidance was moderated by anxiety sensitivity. We hypothesized that individuals with higher SC perfectionism and higher anxiety sensitivity would demonstrate greater negative affect through experiential avoidance.

In Study 2, we aimed to replicate and extend the results from Study 1 in a separate sample of community adults. Study 2 utilized a daily diary methodology where participants completed one diary at bedtime assessing anxiety sensitivity, experiential avoidance, and negative affect for 14 consecutive nights. Participants' responses were once again aggregated across time (i.e., days). Study 2 tested the same models and retained the same hypotheses as Study 1, however, Study 2 attempted to extend the results from Study 1 by including additional methodological improvements, such as a daily assessment of anxiety sensitivity rather than the retrospective summary measure used in Study 1. Together, the present studies examined whether the moderated mediation relations among perfectionism, experiential avoidance, anxiety sensitivity, and negative affect are similar to those previously observed with retrospective summary trait measures, which may facilitate the translation of research findings into clinical practice in order to reduce distress in individuals with higher SC perfectionism.

Study 1

Method

Participants

The sample for Study 1 included 146 employed community adults (92 female, 54 male) from a larger sample of 152 participants who completed the baseline measures. Study 1 presents additional analyses of this sample used in two previous studies. Tobin and Dunkley (2021) tested mindfulness and self-compassion as moderators of the relation between perfectionism and anxious and depressive symptoms over two years. Richard and Dunkley (2024) tested longitudinal moderated mediation models of perfectionism, anxiety sensitivity, experiential avoidance, and depressive and anxious symptoms over two years. Participants were recruited through newspaper and online advertisements to obtain a representative community sample from an English- and French-speaking North American city. Participants ranged from 19 to 65 years old with a mean age of 36.99 years (SD = 14.52). Given a bilingual population, 89 Englishspeaking participants (56 female, 33 male) completed the English versions of the questionnaires, and 57 participants (36 female, 21 male) completed the French translations. The majority of participants reported their ethnicity as European (61%, n = 89), while 19% (n = 28) identified as Asian, 5% (n = 7) as Latin American, 3% (n = 4) as African, 2% (n = 3) as East Indian, 2% (n = 3) as Aboriginal, 1% (n = 2) as Middle Eastern, 5% (n = 7) reported multiple ethnicities, and 2% (n = 3) did not specify an ethnicity.

Procedure

This repeated-measures study involved background questionnaires and an ESM procedure. Participants participated voluntarily after a human investigation committee approved the study and informed consent was obtained. Participants first completed an online package of questionnaires that included demographic measures along with measures of perfectionism and anxiety sensitivity during a 1- to 2-hour session. Participants were then asked to complete the ESM procedure consisting of five repeated within-day reports every day for eight consecutive days, resulting in a possible total of 40 within-day reports per participant. The within-day reports included measures assessing affect and experiential avoidance in response to the most bothersome event since the last assessment. The first record of each day asked participants to refer to the timeframe "since I woke up" when answering questions about their experiential avoidance tendencies and affect. For each subsequent within-day record, participants were asked to refer to the timeframe "since the last assessment". To facilitate motivation and compliance, participants completed the ESM records online using their own electronic device (e.g., smartphone, computer, tablet).

Participants were asked to complete one record every two to three hours, allowing for a minimum of 12 hours between their first and fifth within-day records. Participants' records were considered compliant if there was at least one hour between each record. Records were considered non-compliant if the record was incomplete or if there was less than one hour

between records. It took participants an average of 4.66 minutes (SD = 7.68) to complete a record. On average, participants completed one record every 2.88 hours (SD = 1.66) and there were 12.97 hours (SD = 1.81) between their first and last (fifth) within-day records. For Study 1, 120 participants completed over 34 compliant within-day records (>85% compliance rate), 14 participants completed at least 30 compliant within-day records (>75% compliance rate), 5 participants completed at least 20 compliant within-day records (>50% compliance rate) and 7 participants completed between 4-10 compliant within-day records. Participants were compensated \$25 for completing the background questionnaires, \$25 for completing the ESM procedure, and \$25 if they achieved >85% compliance rate for the ESM procedure.

Measures

Perfectionism. SC and PS perfectionism dimensions were measured using the 45-item Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), the 35item Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), the 23-item Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001), and the 66-item Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). Based on previous factor analytic findings (e.g., Dunkley, Ma, et al., 2014; Stoeber & Otto, 2006), SC perfectionism was assessed using the FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R discrepancy, and DEQ self-criticism subscales. PS perfectionism was assessed using the FMPS personal standards, HMPS self-oriented perfectionism and APS-R high standards subscales. As was done in previous studies (e.g., Dunkley, Mandel, et al., 2014; Dunkley et al., 2003), SC and PS perfectionism composite scores were derived by standardizing the specific subscales and averaging z-scores to represent an integration of different theoretical and empirical conceptualizations of the perfectionism construct. Previous research supports the validity and reliability of the DEQ, FMPS, HMPS and APS-R measures (Frost et al., 1990; Hewitt & Flett, 1991; Slaney et al., 2001; Zuroff et al., 2004). Coefficient alphas for Study 1 for FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R discrepancy, DEQ self-criticism, FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards were .90, .86, .94, .85, .83, .90, .87, respectively. Previous studies have supported the convergent and discriminant validity of the higher-order perfectionism composites in hypothesized relations with other measures of personality and psychological (mal)adjustment (e.g., Dunkley, Ma, et al., 2014; Stoeber & Otto, 2006). For Study 1, coefficient alphas for the SC and PS perfectionism composites were .83 and .76, respectively.

Anxiety Sensitivity. Anxiety sensitivity was assessed using the 18-item Anxiety Sensitivity Index–3 (ASI-3; Taylor et al., 2007). The ASI-3 asks participants to rate their level of agreement with statements about anxiety-related experiences, including physical concerns (e.g., "It scares me when my heart beats rapidly"), cognitive concerns (e.g., "When my thoughts seem to speed up, I worry that I might be going crazy"), and social concerns (e.g., "It is important for me not to appear nervous"). The ASI-3 has demonstrated good internal consistency and discriminant, convergent and criterion validity (e.g., Taylor et al., 2007). Coefficient alpha for the ASI-3 in Study 1 was .91.

Within-Day Experiential Avoidance. Experiential avoidance was measured using four items from the Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014). Participants were asked to respond to each item according to the different timeframes of the ESM procedure (i.e., since you woke up or since the last assessment) and in relation to the most bothersome event or issue of the specific record. We selected two items with the highest factor loadings from the behavioural avoidance and distress aversion subscales of the BEAQ, as these subscales have been shown to reflect the core features of the experiential avoidance construct (see Gámez et al., 2011). The behavioural avoidance subscale assesses situational avoidance of physical discomfort and distress, while the distress aversion subscale captures nonacceptance of or negative attitudes toward distress. Both subscales have shown good reliability and validity (Gámez et al., 2011). The coefficient alpha for experiential avoidance measure in Study 1, which was computed by aggregating items across within-day reports, was .90.

Within-Day Negative Affect. The Positive and Negative Affect Schedule – Short Form (PANAS-SF; Thompson, 2007) was used to assess negative affect since the last within-day record. In the PANAS-SF, negative affect is measured using five adjectives (upset, hostile, ashamed, nervous, afraid). The PANAS-SF has demonstrated good reliability and validity (e.g., Thompson, 2007). The coefficient alpha for negative affect in Study 1 was .93, which was computed by aggregating items across within-day records for each participant.

Given the study's bilingual sample, French-speaking participants completed French translations of the perfectionism (Dunkley et al., 2012), affect (Dunkley, Ma, et al., 2014), and experiential avoidance (Monestès et al., 2012) measures, for which the internal consistencies and validity have been shown to be comparable to those of the English versions. The English-version of the ASI was translated into French by bilingual research assistants using forward and back-translation. The coefficient alphas for each measure included in the study were comparable for the English and French versions (difference in α s ranged from .006 to .070). There were no significant differences in the correlations between the ASI and all study measures for participants who completed the measures in English versus French.

Analysis

Data analysis was conducted using SPSS Statistics, version 27. The moderated mediation hypotheses were tested using Hayes' conditional process analysis via the PROCESS macro for SPSS, version 4.0, Model 7 (Hayes, 2017). Conditional process analysis uses a bootstrapping procedure to estimate indirect effects (mediation) but extends on traditional mediation models by simultaneously testing whether the strength of indirect effects vary based on a moderating variable (moderation). Thus, a significant index of moderated mediation denotes that the indirect effect varies based on different levels of the moderator (Hayes, 2017). In the present study, the conditional indirect effect was examined for three levels of the moderator (at the mean, and one standard deviation above and below the mean). The significance of effects was tested using biascorrected 95% confidence intervals based on 10,000 bootstrapped samples and were considered statistically significant at the p < .05 level if the 95% confidence interval did not include zero. The variables included in the interaction term were mean centered prior to analysis.

Results

Descriptive Statistics and Zero-Order Correlations

The 146 participants completed 5,305 out of a possible total of 5,840 compliant withinday reports of experiential avoidance and negative affect. The within-day reports of experiential avoidance and negative affect were averaged for each participant. T-tests revealed no significant differences in the mean scores of these variables between males versus females. Table 1 presents the means, standard deviations, internal consistencies, and zero-order correlations of all Study 1 variables. Correlations were interpreted using Cohen's (1992) criteria for weak (r = 0.10), moderate (r = 0.30), and strong (r = 0.50) effect sizes. SC perfectionism and PS perfectionism were strongly related. Whereas PS perfectionism was weakly related to anxiety sensitivity and unrelated to experiential avoidance and negative affect, SC perfectionism was weakly related to experiential avoidance and strongly related to anxiety sensitivity and negative affect. Anxiety sensitivity and experiential avoidance were moderately interrelated.

Moderated Mediation Analyses

Table 2 presents the regression results for the Study 1 moderated mediation models with SC perfectionism predicting negative affect for Model 1 and Model 2. Both R^2 and the squared semipartial correlation (sr^2) statistics were included as indices of effect size. Sr^2 indicates the strength of association between the dependent variable and one of the independent variables while taking into account the relationships among all the variables, where .01 = small, .09 = medium, and .25 = large effects (Cohen, 1992). Figure 1 presents a graphic of the models along with the bootstrapped conditional indirect effects for Model 1 and Model 2.

Model 1: SC Perfectionism, Anxiety Sensitivity, and Negative Affect Moderated by Experiential Avoidance. Model 1 examined whether experiential avoidance moderated the indirect effect of SC perfectionism on negative affect through anxiety sensitivity. As shown in Table 2, in the first regression analysis both SC perfectionism (B = 7.69, SE = 1.14, p < .001) and experiential avoidance (B = 0.93, SE = 0.22, p < .001) accounted for 19% and 7% of unique variance in anxiety sensitivity, respectively. The interaction between SC perfectionism and experiential avoidance also accounted for 4% of unique variance in anxiety sensitivity (B = 0.74, SE = 0.25, p < .001). In the second set of regressions, both SC perfectionism (B = 0.99, SE =0.24, p < .001) and anxiety sensitivity (B = 0.04, SE = 0.01, p < .01) significantly predicted negative affect, accounting for 8% and 4% of unique variance, respectively. As shown in Figure 1, the index of moderated mediation for Model 1 (.030) was significant (95% CI [.003, .077]). Specifically, the conditional indirect effect of SC perfectionism on negative affect through anxiety sensitivity was significant for those with lower, moderate, and higher experiential avoidance, with the magnitude of the effect significantly increasing for those with greater experiential avoidance tendencies.

Model 2: SC Perfectionism, Experiential Avoidance, and Negative Affect Moderated by Anxiety Sensitivity. Model 2 examined whether anxiety sensitivity moderated the indirect effect of SC perfectionism on negative affect through experiential avoidance. As shown in Table 2, anxiety sensitivity accounted for 6% unique variance in experiential avoidance (B = 0.09, SE =0.03, p < .01). However, SC perfectionism (B = 0.26, SE = 0.48, p = .574) and the interaction between SC perfectionism and anxiety sensitivity (B = 0.03, SE = 0.03, p = .293) were both unrelated to experiential avoidance. In the second set of regressions, both SC perfectionism (B =1.21, SE = 0.21, p < .001) and experiential avoidance (B = 0.04, SE = 0.01, p < .01) significantly predicted negative affect, accounting for 17% and 4% of unique variance, respectively. As shown in Figure 1, the index of moderated mediation for Model 2 (.004) was not significant (95% CI [-.003, .013]). Specifically, the conditional indirect effect of SC perfectionism on negative affect through experiential avoidance was nonsignificant for those with lower, moderate, and higher experiential avoidance.

Moderated Mediation Analyses with PS Perfectionism. To examine the specificity of our results with SC perfectionism, we repeated our moderated mediation analyses with the PS perfectionism composite included in the models instead of SC perfectionism. As was found with SC perfectionism, we obtained significant moderated mediation with Model 1a but not Model 2a. As shown in Table 3, in the first regression analysis for Model 1a, both PS perfectionism (B =2.99, SE = 0.05, p < .05) and experiential avoidance (B = 1.22, SE = 0.24, p < .001) accounted for 4% and 14% of unique variance in anxiety sensitivity, respectively. The interaction between PS perfectionism and experiential avoidance also accounted for 4% of unique variance in anxiety sensitivity (B = 0.72, SE = 0.27, p < .01). In the second set of regressions, anxiety sensitivity accounted for 17% of unique variance in negative affect (B = 0.07, SE = 0.01, p < .001), while PS perfectionism was not significantly related to negative affect (B = 0.16, SE = 0.20, p = .411). As shown in Figure 2, the index of moderated mediation for Model 1a with PS perfectionism (.051) was significant (95% CI [.001, .098]). Specifically, the conditional indirect effect of PS perfectionism on negative affect through anxiety sensitivity was significant for those with moderate and higher, but not lower, experiential avoidance. For Model 2a, the interaction between PS perfectionism and experiential avoidance approached significance (B = 0.05, SE =0.02, p = .052; see Table 3). As shown in Figure 2, the index of moderated mediation for Model 2a with PS perfectionism (.009) was significant (95% CI [.0003, .019]), but the conditional indirect effects of PS perfectionism on negative affect through experiential avoidance were all nonsignificant.

Summary

Our results with Model 1 showed that daily experiential avoidance moderated (i.e., strengthened) the indirect effect of SC perfectionism on daily negative affect through anxiety sensitivity. However, our results with Model 2 were nonsignificant, which indicated that the indirect relation between SC perfectionism and daily negative affect through daily experiential avoidance was not conditional on anxiety sensitivity. In addition, our results when testing Model 1a with PS perfectionism were significant, such that experiential avoidance moderated the indirect effect of PS perfectionism on negative affect through anxiety sensitivity. While a strength of Study 1 involved our use of aggregated situational assessments of experiential avoidance and negative affect, a limitation is that anxiety sensitivity was assessed using a one-occasion retrospective questionnaire. In addition, given the time constraints of the ESM within-

day assessments, our measure of experiential avoidance was very brief and represented a subset of four items from the BEAQ (Gámez et al., 2011).

Study 2

The primary goal of Study 2 was to replicate and extend our findings from Study 1. Study 2 included a situational assessment of anxiety sensitivity and expanded measure of experiential avoidance, with the goal that these additional items would represent a more reliable and valid measure of experiential avoidance that captures the complete construct. Given the additional items in the repeated records, Study 2 utilized a daily diary methodology rather than an ESM procedure whereby participants reported on their anxiety sensitivity, experiential avoidance, and negative affect once daily for fourteen days. We retained the same hypotheses as Study 1.

Method

Participants

The sample for Study 2 included 154 employed community adults (110 female, 44 male) from a larger sample of 159 participants who completed the baseline measures. Five participants were excluded from the present study as they completed less than eight out of 14 daily diaries. Participants were recruited through online advertisements to obtain a representative community sample from an English- and French-speaking North American city. Participants ranged from 18 to 64 years old with a mean age of 32.38 years (SD = 11.43). Given a bilingual population, 115 English-speaking participants (84 female, 31 male) completed the English versions of the questionnaires, and 39 participants (26 female, 13 male) completed the French translations. The majority of participants reported their ethnicity as European (51%, n = 79), while 21% (n = 32) identified as Asian, 7% (n = 10) as African, 6% (n = 9) Latin American, 3% (n = 4) as Middle

Eastern, 2% (n = 3) as East Indian, 1% (n = 2) as Indigenous, while 10% (n = 15) reported multiple ethnicities.

Procedure

Participants participated voluntarily after a human investigation committee approved the study and informed consent was obtained. Participants first completed an online package of questionnaires that included demographic and perfectionism measures during a 1- to 2-hour session. Participants were then asked to complete one daily diary at bedtime for 14 consecutive nights. Participants were asked to complete each diary entry between 9 pm and 3 am each evening, and they were allowed to complete additional days if they missed a diary to reach 14 total completed diaries. Of the 154 participants, 153 completed 14 diaries (100% compliance rate) and one participant completed 13 diaries (93%). The daily diaries included measures assessing anxiety sensitivity, experiential avoidance and affect. Participants were asked to report on their anxiety sensitivity "at this moment" and affect from "today". They were asked to report on their experiential avoidance tendencies today in response to the most bothersome event they experienced during the day. To facilitate motivation and compliance, participants completed the diaries online using their own electronic device (e.g., smartphone, computer, tablet). Participants were compensated \$75 for completing the background questionnaires and daily diaries.

Measures

Perfectionism. SC and PS perfectionism dimensions were measured using the same measures as in Study 1. For Study 2, coefficient alphas for the FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R discrepancy, DEQ self-criticism, FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards were .90, .89, .95, .82, .80, .90, .85, respectively. Coefficient alphas for the SC and PS perfectionism composites were .85 and .73, respectively.

Anxiety Sensitivity. Anxiety sensitivity was assessed using the 5-item Short Scale Anxiety Sensitivity Index (SSASI; Zvolensky et al., 2018). The SSASI is a shorter version of the 18-item Anxiety Sensitivity Index–3 (ASI-3; Taylor et al., 2007) that measures the fear of anxiety and arousal-related sensations. Each item was slightly adapted to assess the timeframe of the daily diaries, such that participants were asked to rate their level of agreement with each item in the present moment. The SASSI has demonstrated good reliability and validity (Zvolensky et al., 2018). The coefficient alpha for the SSASI in Study 2, which was computed by aggregating items across daily reports, was .92.

Experiential Avoidance. Experiential avoidance was measured using the 15-item Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014). The BEAQ is a shorter version of the 62-item Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gámez et al., 2011) that assesses six dimensions of experiential avoidance. Items were adapted for the daily diaries to assess the timeframe of the daily diaries (i.e., today) in response to the most bothersome event or issue of the day. The BEAQ has demonstrated good reliability and validity (Gámez et al., 2014). The coefficient alpha for our experiential avoidance measure in Study 2, which was computed by aggregating items across daily reports, was .93.

Negative Affect. The 20-item Positive and Negative Affect Scale (PANAS; Watson et al., 1988) was used to assess negative affect for *today*. In the PANAS, negative affect is measured using ten adjectives. The PANAS has demonstrated good reliability and validity (Crawford & Henry, 2004). The coefficient alpha for negative affect in Study 2, which was computed by aggregating items across daily reports, was .95.

As in Study 1, measures were available in English and French given the study's bilingual sample (see Study 1 Method). The coefficient alphas for each measure included in Study 2 were comparable for the English and French versions (difference in α s ranged from .004 to .082). There were no significant differences in the correlations between the ASI and all study measures for participants who completed the measure in English versus French, except PS perfectionism was more strongly related to anxiety sensitivity in French participants (r = .45) than English participants (r = .09).

Analysis

The analyses were conducted in the same manner as in Study 1.

Results

Descriptive Statistics and Zero-Order Correlations

The 154 participants completed 2,155 out of a possible total of 2,156 daily diaries. The daily reports of anxiety sensitivity, experiential avoidance and negative affect were averaged for each participant. T-tests revealed no significant differences in the mean scores of these variables between males versus females. Table 4 presents the means, standard deviations, internal consistencies, and zero-order correlations of all Study 2 variables. Correlations were interpreted using Cohen's (1992) criteria for weak (r = 0.10), moderate (r = 0.30), and strong (r = 0.50) effect sizes. SC perfectionism and PS perfectionism were strongly related. Whereas PS perfectionism was weakly related to experiential avoidance, anxiety sensitivity, and negative affect, SC perfectionism was strongly related to experiential avoidance and negative affect, and moderately related to anxiety sensitivity. Anxiety sensitivity and experiential avoidance were strongly interrelated.

Moderated Mediation Analyses

Table 5 presents the regression results for the moderated mediation models predicting negative affect for Model 1 and Model 2. Figure 3 presents a graphic of both models, as well as the bootstrapped conditional indirect effects for Model 1 and Model 2.

Model 1: SC Perfectionism, Anxiety Sensitivity, and Negative Affect Moderated by Experiential Avoidance. Model 1 examined whether experiential avoidance moderated the indirect effect of SC perfectionism on negative affect through anxiety sensitivity. As shown in Table 5, in the first regression analysis both SC perfectionism (B = 0.88, SE = 0.40, p < .05) and experiential avoidance (B = 0.19, SE = 0.03, p < .001) accounted for 2% and 17% of unique variance in anxiety sensitivity, respectively. The interaction between SC perfectionism and experiential avoidance also accounted for 3% of unique variance in anxiety sensitivity (B = 0.08, SE = 0.03, p < .01). In the second set of regressions, both SC perfectionism (B = 2.44, SE = 0.41, p < .001) and anxiety sensitivity (B = 0.41, SE = 0.08, p < .001) significantly predicted negative affect, accounting for 14% and 11% of unique variance, respectively. As shown in Figure 3, the index of moderated mediation for Model 1 (.031) was significant (95% CI [.009, .061]). Specifically, the conditional indirect effect of SC perfectionism on negative affect through anxiety sensitivity was significant for those with moderate and higher, but not lower, experiential avoidance.

Model 2: SC Perfectionism, Experiential Avoidance, and Negative Affect Moderated by Anxiety Sensitivity. Model 2 examined whether anxiety sensitivity moderated the indirect effect of SC perfectionism on negative affect through experiential avoidance. As shown in Table 5, SC perfectionism (B = 4.39, SE = 0.94, p < .001) and anxiety sensitivity (B = 1.19, SE = 0.19, p < .001) accounted for 9% and 15% of unique variance in experiential avoidance, respectively. However, the interaction between SC perfectionism and anxiety sensitivity was not significantly related to experiential avoidance (B = -0.17, SE = 0.18, p = .352). In the second set of regressions, both SC perfectionism (B = 2.01, SE = 0.41, p < .001) and experiential avoidance (B = 0.19, SE = 0.03, p < .001) significantly predicted negative affect, accounting for 8% and 15% of unique variance, respectively. As shown in Figure 3, the index of moderated mediation for Model 2 (-.033) was not significant (95% CI [-.119, .046]). However, the conditional indirect effects of SC perfectionism on negative affect through experiential avoidance were significant for those with lower, moderate, and higher anxiety sensitivity.

Moderated Mediation Analyses with PS Perfectionism. To examine the specificity of our results with SC perfectionism, we repeated our moderated mediation analyses with the PS perfectionism composite included in the models instead of SC perfectionism. The regression results are shown in Table 6, and the bootstrapped conditional effects are shown in Figure 4 for Model 1a and Model 2a. As shown in Figure 4, the index of moderated mediation was not significant for both Model 1a (.031, 95% CI [-.011, .068]), and Model 2a (.037, 95% CI [-.065, .151]) with PS perfectionism.

Summary

Study 2 used a daily diary method to replicate and extend the results from Study 1, while including a daily measure of anxiety sensitivity and an expanded measure of daily experiential avoidance. As was found in Study 1, our results with Model 1 in Study 2 showed that daily experiential avoidance moderated the indirect effect of SC perfectionism on daily negative affect through daily anxiety sensitivity. Our results with Model 2 showed that while daily experiential avoidance mediated the effect of SC perfectionism on daily negative affect, this effect was not moderated by daily anxiety sensitivity, which is also in line with our Study 1 findings. Conversely, both moderated mediation models were not significant when tested with PS

perfectionism in Study 2, whereas in Study 1 we obtained significant results when testing Model 1 with PS perfectionism.

General Discussion

The present research is the first to use repeated daily assessments to test anxiety sensitivity and experiential avoidance as moderators and mediators of the association between SC perfectionism and daily negative affect. Study 1 utilized an ESM procedure and aggregated situational assessments of experiential avoidance and negative affect, while Study 2 utilized a daily diary methodology and aggregated daily assessments of anxiety sensitivity, experiential avoidance, and negative affect. By aggregating participants' repeated records across time and situations, we empirically derived trait-like measures of these constructs as they are manifested across time and many stressful situations in daily living, compared to retrospective self-report measures that ask participants to summarize these tendencies (Moskowitz, 1986; Schwartz et al., 1999). Moderated mediation results with Model 1 were significant across both studies and showed that higher SC perfectionism in combination with higher daily experiential avoidance was indirectly related to daily negative affect through anxiety sensitivity. Moderated mediation results with Model 2 were not significant across both studies, such that anxiety sensitivity did not moderate the indirect effect of SC perfectionism on daily negative affect through daily experiential avoidance.

Our moderated mediation results with Model 1 were consistent in both studies and showed that experiential avoidance across many daily stressors enhanced the vulnerability associated with anxiety sensitivity for individuals higher in SC perfectionism. Specifically, the indirect effect of SC perfectionism on daily negative affect through anxiety sensitivity was moderated (i.e., strengthened) by daily experiential avoidance tendencies. Our results with Model 1 using aggregated situation-specific assessments of experiential avoidance (in both studies) and anxiety sensitivity (in Study 2 only) replicated previous longitudinal findings that used retrospective measures (Richard & Dunkley, 2024). The present studies extend Richard and Dunkley's (2024) findings over two years by supporting that individuals with higher SC perfectionism and daily experiential avoidance tendencies maintain greater daily negative affect through anxiety sensitivity. One possible explanation for our Model 1 findings is that individuals who are higher in SC perfectionism and who engage in avoidance to escape their negative self-awareness across different stressful situations might typically experience heightened feelings of weakness, failure, and loss of control, which reinforces their fears of anxious symptoms. Conversely, SC perfectionistic individuals who are more willing to tolerate negative self-referential thoughts and feelings during the day might have less negative self-descriptions when they experience anxious symptoms, promoting greater attitudes of self-acceptance and self-compassion (Hayes et al., 2006; Kashdan et al., 2008; Moroz & Dunkley, 2019; Richard & Dunkley, 2024).

Our moderated mediation results with Model 2 were nonsignificant across both studies. Specifically, SC perfectionism did not interact with anxiety sensitivity to predict enhanced vulnerability associated with daily experiential avoidance. Our results with Model 2 did not align with our hypotheses or previous findings using retrospective measures, which showed that anxiety sensitivity moderated the indirect effect of SC perfectionism on depressive and anxious symptoms over two years through experiential avoidance (Richard & Dunkley, 2024). The different results across these studies might be understood in terms of the different timeframes assessed (i.e., yearly versus daily assessments). Anxiety sensitivity might not enhance the vulnerability associated with experiential avoidance on a day-to-day basis (i.e., over the shorterterm). However, anxiety sensitivity might cumulatively lead SC perfectionistic individuals to become increasingly inclined to engage in experiential avoidance over time, thereby enhancing the vulnerability to distress over the longer term, as found by Richard & Dunkley (2024). Specifically, the negative self-awareness associated with the fearful reactions to anxious symptoms in individuals with greater SC perfectionism may increasingly lead to the rigid and inflexible use of experiential avoidance and prevent the pursuit of adaptive goal-directed behaviours over time (Hayes et al., 2004; Hayes et al., 1999).

Although our moderated mediation hypotheses were not supported for Model 2, the results are nevertheless consistent with previous cross-sectional (e.g., Moroz & Dunkley, 2015) and longitudinal (e.g., Moroz & Dunkley, 2019) studies establishing experiential avoidance as a mediating mechanism explaining SC perfectionistic individuals' vulnerability to distress. In Study 1, the effect of SC perfectionism on experiential avoidance was not significant when controlling for anxiety sensitivity, which suggests that anxiety sensitivity may mediate rather than moderate the relation between SC perfectionism and daily experiential avoidance. In Study 2, SC perfectionism was uniquely related to experiential avoidance while controlling for anxiety sensitivity and we found evidence for simple (rather than moderated) mediation, such that the indirect effect of SC perfectionism on daily negative affect through daily experiential avoidance was significant. Our different pattern of results across both studies might be explained by differences in the correlations between SC perfectionism and daily experiential avoidance, which were weak in Study 1 and strong in Study 2. Such differences may be due to using an expanded measure of experiential avoidance in Study 2 that better captures the complete construct of experiential avoidance compared to the brief measure in Study 1. In addition, our measure of experiential avoidance in Study 1 represented an aggregate of participants' five within-day

reports versus a single daily report in Study 2. It is possible that there might be stronger associations with end-of-day summaries rather than multiple within-day reports, which capture greater variance in participants' tendencies across a single day. Taken together, our Model 2 results support that individuals with higher SC perfectionism tend to be motivated to escape from their negative self-referential thoughts and feelings by engaging in experiential avoidance on a daily basis (see Heatherton & Baumeister, 1991), which in turn, may explain their greater maintenance of negative affect over days.

In contrast to our findings with SC perfectionism, PS perfectionism was unrelated or weakly related to anxiety sensitivity, experiential avoidance, and negative affect across both studies. However, our moderated mediation results with PS perfectionism differed across Study 1 and 2. In Study 1, we found support for Model 1 with PS perfectionism such that daily experiential avoidance moderated the indirect effect of PS perfectionism on daily negative affect through anxiety sensitivity. However, these results were not replicated in Study 2, where both moderated mediation models were nonsignificant with PS perfectionism. Richard and Dunkley (2024) also found no support for either moderated mediation model over two years, which calls into question the replicability of our findings with Model 1 in Study 1. One possible way to interpret these results as a whole is to consider the previous finding that individuals higher in PS perfectionism engage in more adaptive emotion regulation strategies (e.g., reappraisal) and experience less emotion dysregulation (e.g., Vois & Damian, 2020). Their utilization of other more adaptive emotion regulation strategies might offset the vulnerability associated with anxiety sensitivity and experiential avoidance over the longer term by allowing them to flexibly tolerate such experiences and persist in committed action (Hayes et al., 2006). Taken together, our findings are largely consistent with a broader literature that establishes SC perfectionism as

the more maladaptive dimension of perfectionism (see Stoeber & Otto, 2006), such that the negative self-evaluative features of SC perfectionism are primarily responsible for perpetuating anxiety sensitivity, experiential avoidance, and negative affect over time.

Clinical Implications

There are important clinical implications to consider in relation to our results, especially given the literature finding that individuals higher in SC perfectionism demonstrate a poor response to traditional treatments and become resistant when their perfectionism is addressed directly in therapy (Kannan & Levitt, 2013; Löw et al., 2020). Our moderated mediation findings with Model 1 suggest that interventions aimed at decreasing SC perfectionistic individuals' daily experiential avoidance may be beneficial in reducing their daily anxiety sensitivity and, in turn, their daily experiences of negative affect. Our mediation findings with Model 2 also suggest the importance of targeting daily experiential avoidance as an important mechanism explaining the relation between SC perfectionism and daily negative affect. Interventions from third-wave therapies, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) and Dialectical Behavior Therapy (DBT; Linehan, 1993), aim to reduce experiential avoidance by teaching individuals to nonjudgmentally accept, rather than reject or control, negative internal events while committing to effective, values-informed behaviours. Interventions from these approaches, such as mindfulness, distress tolerance, and cognitive defusion, might help individuals with greater SC perfectionism reduce their experiential avoidance by changing their responses to negative internal events. Focusing on moderating and mediating mechanisms, such as experiential avoidance in this case, might produce important gains and help foster mastery in SC perfectionistic individuals without directly confronting their perfectionistic beliefs.

Limitations and Future Directions

There were limitations to the present research that warrant attention in future studies. First, the present research used self-report measures and therefore was susceptible to the disadvantages and biases associated with this type of methodology. Future research might use informant reports, assessment of observable behaviours, or interviews to supplement self-reports. Second, the present research assessed the mediators and moderators concurrently and therefore the direction of causality among variables cannot be ascertained. Future research should explore the temporal ordering of anxiety sensitivity and experiential avoidance to determine the direction of causality of the relations observed in this study, as well as to study the timeframe (i.e., daily, yearly) by which these constructs influence one another. Third, given that our samples consisted of nonclinical community adults, the majority of which were female and Caucasian, future research should examine the generalizability of our findings to male, racial/ethnic minority, and clinical (e.g., individuals with mood and/or anxiety disorders) samples. Finally, research is needed that tests the effectiveness of therapies targeting anxiety sensitivity and experiential avoidance in individuals with higher SC perfectionism.

Conclusion

The present research used ESM (Study 1) and daily diary (Study 2) methods to examine how anxiety sensitivity and experiential avoidance moderated and mediated SC perfectionistic individuals' vulnerability to greater daily negative affect in two samples of community adults. Moderated mediation analyses demonstrated that daily experiential avoidance moderated the indirect effect of SC perfectionism on daily negative affect through anxiety sensitivity. Our results with Model 1 replicate Richard and Dunkley's (2024) longitudinal findings using retrospective summary self-report measures, thus providing a richer and more nuanced understanding of how experiential avoidance and anxiety sensitivity tendencies work together to create vulnerability for individuals with greater SC perfectionism. Conversely, our results with Model 2 showed that anxiety sensitivity did not significantly moderate the indirect relation of SC perfectionism on daily negative affect through daily experiential avoidance, contrary to Richard and Dunkley's (2024) longitudinal findings over two years. This suggests that the moderating effect of anxiety sensitivity on experiential avoidance might take place over a longer time period. This research underscores the importance of considering how different levels of psychological vulnerabilities combine to differentially predict distress, which may benefit individualized treatment initiatives.

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Tables for Article 2

Table 1

Bivariate Correlations, means, standard deviations and internal consistencies for Study 1

Variable		1	2	3	4	5
1. SC Perfectionism		.83				
2. PS Perfectionism		.51***	.76			
3. Anxiety Sensitivity		.56***	.18*	.91		
4. Experiential Avoidance		.24**	01	.37***	.90	
5. Negative Affect		.48***	.14	.43***	.32***	.93
	М	-0.01	0.00	17.38	10.77	7.37
	SD	0.84	0.90	14.16	4.32	2.39

Note. N = 146

SC = Self-critical. PS = Personal standards.

Cronbach alphas are presented in bold on the diagonal.

* p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model Characteristics with SC Perfectionism Predicting Daily Negative Affect for Study 1

		Anxie	ety Sensitivity						
Model 1	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2	
SC Perfectionism (X)	7.69***	1.14	[5.43, 9.94]	.190	0.99***	0.24	[0.50, 1.47]	.083	
Experiential Avoidance (W)	0.93***	0.22	[0.50, 1.37]	.074	-	-	-	-	
Anxiety Sensitivity (M)	-	-	-	-	0.04**	0.01	[0.01, 0.07]	.038	
$X \times W$	0.74***	0.25	[0.24, 1.25]	.035	-	-	-	-	
Constant	16.72***	0.94	[14.87, 18.58]	-	6.68***	0.31	[6.08, 7.29]	-	
	R^2 = .41, $F(3, 142) = 32.34$ ***					R^2 = .27, $F(2, 143) = 26.00$ ***			
		Experie	ntial Avoidance			Nega	tive Affect		
Model 2	<i>B</i>	Experie SE	ntial Avoidance 95% CI	sr ²	B	Nega SE	tive Affect 95% CI	sr ²	
Model 2 SC Perfectionism (X)	<u>B</u> 0.26	Experie SE 0.48	ntial Avoidance 95% CI [-0.68, 1.21]	<i>sr</i> ² .002	B 1.21***	Nega <i>SE</i> 0.21	ntive Affect 95% CI [0.80, 1.62]	<i>sr</i> ² .171	
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W)	<i>B</i> 0.26 0.09**	Experies SE 0.48 0.03	ntial Avoidance 95% CI [-0.68, 1.21] [0.03, 0.15]	<i>sr</i> ² .002 .056	<i>B</i> 1.21***	Nega <i>SE</i> 0.21	tive Affect 95% CI [0.80, 1.62]	<i>sr</i> ² .171	
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M)	B 0.26 0.09**	Experie SE 0.48 0.03	ntial Avoidance 95% CI [-0.68, 1.21] [0.03, 0.15] -	<i>sr</i> ² .002 .056	B 1.21*** - 0.12**	Nega <u>SE</u> 0.21 - 0.04	tive Affect 95% CI [0.80, 1.62] - [0.04, 0.20]	<i>sr</i> ² .171 - .044	
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M) $X \times W$	B 0.26 0.09** - 0.03	Experie SE 0.48 0.03 - 0.03	ntial Avoidance 95% CI [-0.68, 1.21] [0.03, 0.15] - [-0.03, 0.09]	<i>sr</i> ² .002 .056 - .007	B 1.21*** 0.12**	Nega SE 0.21 - 0.04 -	tive Affect 95% CI [0.80, 1.62] [0.04, 0.20]	<i>sr</i> ² .171 - .044	
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M) $X \times W$ Constant	<i>B</i> 0.26 0.09** - 0.03 10.55***	Experie SE 0.48 0.03 - 0.03 0.39	ntial Avoidance 95% CI [-0.68, 1.21] [0.03, 0.15] - [-0.03, 0.09] [9.78, 11.32]	<i>sr</i> ² .002 .056 - .007	<i>B</i> 1.21*** - 0.12** - 6.09***	Nega <i>SE</i> 0.21 - 0.04 - 0.47	tive Affect 95% CI [0.80, 1.62] - [0.04, 0.20] - [5.16, 7.02]	<i>sr</i> ² .171 - .044 -	

Note. SC = Self-critical. $X = Independent variable. <math>W = Moderating variable. M = Mediating variable. <math>X \ge W = Interaction$ between independent and moderating variable.

* p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model Characteristics with PS Perfectionism Predicting Negative Affect for Study 1

		Anxie	ety Sensitivity	Negative Affect				
Model 1a	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2
PS Perfectionism (X)	2.99*	1.18	[0.66, 5.32]	.036	0.16	0.20	[-0.24, 0.57]	.004
Experiential Avoidance (W)	1.22***	0.24	[0.74, 1.70]	.138	-	-		-
Anxiety Sensitivity (M)	-	-	-	-	0.07***	0.01	[0.05, 0.10]	.169
X imes W	0.72**	0.27	[0.19, 1.26]	.039	-	-	-	-
Constant	17.41***	1.05	[15.33, 19.49]	-	6.15***	0.29	[5.58, 6.72]	-
	R^2	P = .21, F	(3, 142) = 12.68***	$R^2 = .19, F(2, 143) = 16.48^{***}$				
		Experie	ntial Avoidance			Nega	tive Affect	
Model 2a	<i>B</i>	Experie SE	ntial Avoidance 95% CI	sr ²	B	Nega SE	tive Affect 95% CI	sr ²
Model 2a PS Perfectionism (X)	<i>B</i> -0.41	Experie SE 0.37	ntial Avoidance 95% CI [-1.15, 0.33]	<i>sr</i> ² .007	<i>B</i> 0.37	Nega <u>SE</u> 0.21	tive Affect 95% CI [-0.04, 0.79]	<i>sr</i> ² .019
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W)	B -0.41 0.11***	Experie SE 0.37 0.02	ntial Avoidance 95% CI [-1.15, 0.33] [0.07, 0.16]	<i>sr</i> ² .007 .134	<i>B</i> 0.37	Nega <u>SE</u> 0.21	tive Affect 95% CI [-0.04, 0.79]	<i>sr</i> ² .019
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M)	<i>B</i> -0.41 0.11***	Experie SE 0.37 0.02	ntial Avoidance 95% CI [-1.15, 0.33] [0.07, 0.16]	<i>sr</i> ² .007 .134	B 0.37 - 0.18***	Nega <u>SE</u> 0.21 - 0.04	tive Affect <u>95% CI</u> [-0.04, 0.79] - [0.09, 0.26]	<i>sr</i> ² .019 - .102
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M) $X \times W$	<u>B</u> -0.41 0.11*** - 0.05	Experie <u>SE</u> 0.37 0.02 - 0.02	ntial Avoidance 95% CI [-1.15, 0.33] [0.07, 0.16] - [-0.00, 0.10]	<i>sr</i> ² .007 .134 - .023	B 0.37 0.18***	Nega <u>SE</u> 0.21 - 0.04 -	tive Affect 95% CI [-0.04, 0.79] - [0.09, 0.26] -	<i>sr</i> ² .019 - .102
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M) $X \times W$ Constant	B -0.41 0.11*** - 0.05 10.66***	Experie <u>SE</u> 0.37 0.02 - 0.02 0.33	ntial Avoidance 95% CI [-1.15, 0.33] [0.07, 0.16] - [-0.00, 0.10] [10.00, 11.32]	<i>sr</i> ² .007 .134 - .023	<i>B</i> 0.37 0.18*** 5.46***	Nega <u>SE</u> 0.21 - 0.04 - 0.50	tive Affect 95% CI [-0.04, 0.79] - [0.09, 0.26] - [4.46, 6.46]	<i>sr</i> ² .019 - .102 -

Note. PS = Personal standards. X = Independent variable. W = Moderating variable. M = Mediating variable. $X \propto W = Interaction$ between independent and moderating variable. * p < .05; ** p < .01; *** p < .001.

Variable		1	2	3	4	5
1. SC Perfectionism		.85				
2. PS Perfectionism		.50***	.73			
3. Anxiety Sensitivity		.41***	.19*	.92		
4. Experiential Avoidance		.50***	.18*	.57***	.93	
5. Negative Affect		.56***	.20*	.54***	.61***	.95
	М	-0.00	-0.00	9.07	39.50	16.58
	SD	0.85	0.87	4.63	11.73	5.12

Bivariate Correlations, means, standard deviations and internal consistencies for Study 2

Note. N = 154

SC = Self-critical. PS = Personal standards.

Cronbach alphas are presented in bold on the diagonal.

* p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model Characteristics with SC Perfectionism Predicting Negative Affect for Study 2

		Anxie	ty Sensitivity	Negative Affect				
Model 1	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2
SC Perfectionism (X)	0.88*	0.40	[0.09, 1.68]	.020	2.44***	0.41	[1.64, 3.24]	.138
Experiential Avoidance (W)	0.19***	0.03	[0.13, 0.25]	.173	-	-	-	-
Anxiety Sensitivity (M)	-	-	-	-	0.41***	0.08	[0.26, 0.56]	.113
$X \times W$	0.08**	0.03	[0.02, 0.13]	.031	-	-	-	-
Constant	8.69***	0.33	[8.05, 9.34]	-	12.88***	0.75	[11.40, 14.36]	-
	R ²	$e^2 = .38, F($	(3, 150) = 30.65***	R^2 = .42, $F(2, 151) = 55.55$ ***				
		Experie	ntial Avoidance			Nega	ative Affect	
Model 2	<i>B</i>	Experies SE	ntial Avoidance 95% CI	sr ²	B	Nega SE	ative Affect 95% CI	sr ²
Model 2 SC Perfectionism (X)	<i>B</i> 4.39***	Experies SE 0.94	ntial Avoidance 95% CI [2.54, 6.25]	<i>sr</i> ² .085	<i>B</i> 2.01***	Nega <i>SE</i> 0.41	ative Affect 95% CI [1.19, 2.83]	<i>sr</i> ² .084
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W)	<i>B</i> 4.39*** 1.19***	Experies SE 0.94 0.19	ntial Avoidance 95% CI [2.54, 6.25] [0.82, 1.57]	<i>sr</i> ² .085 .154	<i>B</i> 2.01***	Nega SE 0.41	ative Affect 95% CI [1.19, 2.83]	<i>sr</i> ² .084
Model 2 SC Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M)	<i>B</i> 4.39*** 1.19***	Experies SE 0.94 0.19	ntial Avoidance 95% CI [2.54, 6.25] [0.82, 1.57]	<i>sr</i> ² .085 .154	B 2.01*** - 0.19***	Nega <u>SE</u> 0.41 - 0.03	ative Affect <u>95% CI</u> [1.19, 2.83] - [0.14, 0.25]	<i>sr</i> ² .084 - .149
Model 2SC Perfectionism (X)Anxiety Sensitivity (W)Experiential Avoidance (M) $X \times W$	<i>B</i> 4.39*** 1.19*** - -0.17	Experies <u>SE</u> 0.94 0.19 - 0.18	ntial Avoidance 95% CI [2.54, 6.25] [0.82, 1.57] - [-0.52, 0.19]	<i>sr</i> ² .085 .154 - .003	B 2.01*** - 0.19***	Nega <u>SE</u> 0.41 - 0.03 -	ative Affect 95% CI [1.19, 2.83] - [0.14, 0.25] -	<i>sr</i> ² .084 - .149
Model 2SC Perfectionism (X)Anxiety Sensitivity (W)Experiential Avoidance (M) $X \times W$ Constant	<i>B</i> 4.39*** 1.19*** - -0.17 39.77***	Experies SE 0.94 0.19 - 0.18 .79	ntial Avoidance 95% CI [2.54, 6.25] [0.82, 1.57] - [-0.52, 0.19] [38.22, 41.32]	<i>sr</i> ² .085 .154 - .003	B 2.01*** - 0.19*** - 8.89***	Nega <u>SE</u> 0.41 - 0.03 - 1.23	ative Affect 95% CI [1.19, 2.83] - [0.14, 0.25] - [6.47, 11.32]	<i>sr</i> ² .084 - .149 -

Note. SC = Self-critical. X = Independent variable. W = Moderating variable. M = Mediating variable. $X \times W$ = Interaction between independent and moderating variable. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model Characteristics with PS Perfectionism Predicting Negative Affect for Study 2

		ety Sensitivity						
Model 1a	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2
PS Perfectionism (X)	0.57	0.36	[-0.14, 1.28]	.011	0.61	0.41	[-0.20, 1.42]	.010
Experiential Avoidance (W)	0.21***	0.03	[0.16, 0.26]	.261	-	-	-	-
Anxiety Sensitivity (M)	-	-	-	-	0.57***	0.08	[0.42, 0.72]	.256
$X \times W$	0.05	0.03	[-0.01, 0.12]	.012	-	-	-	-
Constant	8.97***	0.31	[8.357, 9.580]	-	11.40***	0.78	[0.42,0.72]	-
	R ²	$e^2 = .35, F$	(3, 150) = 26.80***		R^2	= .30, F(2)	2, 151) = 31.86***	
		Evnerie	ntial Avoidance			Nega	tive Δ ffect	
		Experie	Innal Avoluance			11080	live Alleet	
Model 2a	В	SE SE	95% CI	sr ²	В	SE	95% CI	sr ²
Model 2a PS Perfectionism (X)	<i>B</i> 1.00	<i>SE</i> 0.92	<u>95% CI</u> [-0.82, 2.82]	<i>sr</i> ² .005	<i>B</i> 0.57	<i>SE</i> 0.38	<u>95% CI</u> [-0.19, 1.33]	<i>sr</i> ² .009
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W)	<i>B</i> 1.00 1.38***	<i>SE</i> 0.92 0.18	95% CI [-0.82, 2.82] [1.03, 1.74]	<i>sr</i> ² .005 .263	<i>B</i> 0.57	SE 0.38	95% CI [-0.19, 1.33] -	<i>sr</i> ² .009
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M)	<i>B</i> 1.00 1.38***	<i>SE</i> 0.92 0.18	95% CI [-0.82, 2.82] [1.03, 1.74]	<i>sr</i> ² .005 .263	<i>B</i> 0.57 - 0.26***	SE 0.38 - 0.03	<u>95% CI</u> [-0.19, 1.33] - [0.20, 0.32]	<i>sr</i> ² .009 - .345
Model 2aPS Perfectionism (X)Anxiety Sensitivity (W)Experiential Avoidance (M) $X \times W$	<i>B</i> 1.00 1.38*** - 0.14	<i>SE</i> 0.92 0.18 - 0.20	95% CI [-0.82, 2.82] [1.03, 1.74] - [-0.26, 0.54]	<i>sr</i> ² .005 .263 - .002	<i>B</i> 0.57 0.26***	SE 0.38 - 0.03 -	95% CI [-0.19, 1.33] [0.20, 0.32]	<i>sr</i> ² .009 - .345 -
Model 2a PS Perfectionism (X) Anxiety Sensitivity (W) Experiential Avoidance (M) $X \times W$ Constant	<i>B</i> 1.00 1.38*** - 0.14 39.39***	SE 0.92 0.18 - 0.20 0.79	95% CI [-0.82, 2.82] [1.03, 1.74] - [-0.26, 0.54] [37.82, 40.96]	<i>sr</i> ² .005 .263 - .002	<i>B</i> 0.57 0.26*** 6.30***	<i>SE</i> 0.38 - 0.03 - 1.16	<u>95% CI</u> [-0.19, 1.33] [0.20, 0.32] [4.00, 8.60]	<i>sr</i> ² .009 - .345 -

Note. PS = Personal standards. X = Independent variable. W = Moderating variable. M = Mediating variable. $X \propto W = Interaction$ between independent and moderating variable. * p < .05; ** p < .01; *** p < .001.

Figure 1

Model Characteristics and Conditional Indirect Effects with SC Perfectionism for Study 1



Study 1, Model 1: SC Perfectionism \rightarrow Anxiety Sensitivity \rightarrow Negative Affect





Note. Conditional process models and bootstrapped conditional indirect effects for Model 1 and Model 2 of Study 1 depicting the indirect relationship between self-critical (SC) perfectionism and daily negative affect. * p < .05; ** p < .01; *** p < .001.

Figure 2

Model Characteristics and Conditional Indirect Effects with PS Perfectionism for Study 1



Study 1, Model 1a: PS Perfectionism \rightarrow Anxiety Sensitivity \rightarrow Negative Affect

Lower Experiential Avoidance (-1 SD):B = -0.010, SE = 0.098, 95% CI [-0.223, 0.170]Mean Experiential Avoidance: $B = 0.211^*$, SE = 0.094, 95% CI [0.029, 0.404]Higher Experiential Avoidance (+1 SD): $B = 0.432^*$, SE = 0.173, 95% CI [0.077, 0.768]Index of Moderated Mediation: $B = 0.051^*$, SE = 0.024, 95% CI [0.001, 0.098]

Study 1, Model 2a: PS Perfectionism \rightarrow Experiential Avoidance \rightarrow Negative Affect



Note. Conditional process models and bootstrapped conditional indirect effects for Model 1a and Model 2a of Study 1 depicting the indirect relationship between personal standards (PS) perfectionism and daily negative affect. * p < .05; ** p < .01; *** p < .001.

Model Characteristics and Conditional Indirect Effects with SC Perfectionism for Study 2



Study 2, Model 1: SC Perfectionism \rightarrow Anxiety Sensitivity \rightarrow Negative Affect

Lower Experiential Avoidance (-1 SD):B = -0.000, SE = 0.193, 95% CI [-0.412, 0.353]Mean Experiential Avoidance: $B = 0.359^*$, SE = 0.187, 95% CI [0.019, 0.753]Higher Experiential Avoidance (+1 SD): $B = 0.718^*$, SE = 0.282, 95% CI [0.255, 1.351]Index of Moderated Mediation: $B = 0.031^*$, SE = 0.013, 95% CI [0.009, 0.061]

Study 2, Model 2: SC Perfectionism \rightarrow Experiential Avoidance \rightarrow Negative Affect



Note. Conditional process models and bootstrapped conditional indirect effects for Model 1 and Model 2 of Study 2 depicting the indirect relationship between self-critical (SC) perfectionism and daily negative affect. * p < .05; ** p < .01; *** p < .001.

Model Characteristics and Conditional Indirect Effects with PS Perfectionism for Study 2



Study 2, Model 1a: PS Perfectionism \rightarrow Anxiety Sensitivity \rightarrow Negative Affect

Lower Experiential Avoidance (-1 SD):B = -0.039, SE = 0.214, 95% CI [-0.482, 0.367]Mean Experiential Avoidance:B = 0.326, SE = 0.210, 95% CI [-0.119, 0.721]Higher Experiential Avoidance (+1 SD):B = 0.691, SE = 0.386, 95% CI [-0.142, 1.396]Index of Moderated Mediation:B = 0.031, SE = 0.020, 95% CI [-0.011, 0.068]

Study 2, Model 2a: PS Perfectionism \rightarrow Experiential Avoidance \rightarrow Negative Affect



Note. Conditional process models and bootstrapped conditional indirect effects for Model 1a and Model 2a of Study 2 depicting the indirect relationship between personal standards (PS) perfectionism and daily negative affect. * p < .05; ** p < .01; *** p < .001.

General Discussion

The principal aim of this thesis was to better understand the mechanisms contributing to the association between self-critical (SC) perfectionism and negative psychosocial outcomes, in hopes that this research could potentially inform prevention and intervention efforts for these individuals. Based on an integration of previous theory and research, the present thesis consists of two articles that tested two moderated mediation models investigating how different combinations of high versus low levels of anxiety sensitivity and experiential avoidance combine to differentially predict distress outcomes among individuals with greater SC perfectionism. Model 1 tested whether the indirect effect of SC perfectionism on distress symptoms through anxiety sensitivity was moderated by experiential avoidance. Model 2 tested whether the mediating effect of experiential avoidance in the relation between SC perfectionism and distress was moderated by anxiety sensitivity. Article 1 examined the applicability of these moderated mediation models in the longitudinal relation among the SC and personal standards (PS) perfectionism dimensions and anxious and depressive symptoms over a period of two years in a sample of community adults. Article 2 aimed to replicate and extend the findings from Article 1 by examining these relations in the context of daily living. Specifically, Article 2 included two studies that tested the same moderated mediation models predicting the maintenance of daily negative affect using experience sampling (Study 1) and daily diary (Study 2) methods. The following sections will discuss the implications of these findings to our understanding of the relationship between perfectionism, anxiety sensitivity, experiential avoidance, and distress.

SC Perfectionism as a Predictor of Anxiety Sensitivity and Experiential Avoidance

The findings from the present thesis indicate that greater levels of SC perfectionism were significantly associated with greater tendencies towards anxiety sensitivity and experiential

avoidance. Article 1 demonstrated that SC perfectionism was strongly associated with greater anxiety sensitivity and experiential avoidance over time. A strength of Article 2 was the inclusion of a more ecologically valid assessment of experiential avoidance (in Study 1 and 2) and anxiety sensitivity (in Study 2). Specifically, participants' repeated records were aggregated across time and situations to create empirically derived trait-like measures of these constructs as they are manifested across many different situations in daily living, compared to retrospective self-report measures that ask participants to summarize these tendencies over time (Moskowitz, 1986; Schwartz et al., 1999). Both studies in Article 2 found that SC perfectionism was moderately to strongly related to aggregated daily experiential avoidance across stressful situations. Article 2 also found that SC perfectionism was strongly related to retrospective summary reports of anxiety sensitivity in Study 1 and moderately related to aggregated daily reports of anxiety sensitivity in Study 2. As such, SC perfectionism retained comparable positive associations with both anxiety sensitivity and experiential avoidance when assessed using retrospective summary and aggregated daily reports across the three studies in the present thesis.

The finding that SC perfectionism was associated with greater anxiety sensitivity and experiential avoidance, two maladaptive self-regulation tendencies, supports a broader literature demonstrating that individuals with higher SC perfectionism tend to engage in maladaptive coping (e.g., Dunkley et al., 2014; Dunkley et al., 2003) and emotion regulation strategies (e.g., Malivoire et al., 2019). More specifically, the present findings with anxiety sensitivity are in line with previous theory (e.g., Ellis, 2002) and research (Cox et al., 2001; Flett et al., 2004; Pirbaglou et al., 2013) positing that individuals with higher SC perfectionism tend to fearfully react to anxiety-related symptoms because their anxious arousal is interpreted as a sign of weakness, failure, or as a risk for negative evaluation. Further, our findings with experiential avoidance support previous theory (e.g., Heatherton & Baumeister, 1991) and research (e.g., Moroz & Dunkley, 2015, 2019) finding that individuals with higher SC perfectionism attempt to escape negative internal experiences (e.g., thoughts, feelings) that threaten to reinforce their negative self-view as being flawed, imperfect, and not good enough. Rather than remaining in contact with their state of negative self-awareness, individuals with greater SC perfectionism appear motivated to control, avoid, or escape the aversive thoughts and feelings that activate their perfectionistic concerns (Santanello & Gardner, 2007).

While previous research has studied the links between SC perfectionism and both anxiety sensitivity and experiential avoidance on average, the present thesis extends these findings by being the first to move beyond main effect analyses. Despite the strong associations amongst these constructs on average, this thesis considered the differential effects of being "an exception to an average" (Hayes et al., 2023, p. 1053). Such investigations challenge arguments that anxiety sensitivity and experiential avoidance capture the same process and also parallels clinical work whereby targeting and decoupling the co-occurrence of two related processes can be an important treatment goal (Hayes et al., 2023).

Model 1: Anxiety Sensitivity as Mediator between SC Perfectionism and Distress, Moderated by Experiential Avoidance

The findings from the present thesis support that experiential avoidance enhances (i.e., moderates) the vulnerability associated with anxiety sensitivity for individuals higher in SC perfectionism. In Article 1, anxiety sensitivity mediated the association between SC perfectionism and anxious arousal over two years for individuals with higher, but not lower or moderate, experiential avoidance. The longitudinal nature of the findings from Article 1 provides a crucial test of the theory that experiential avoidance promotes greater anxiety sensitivity over

time, which, in turn, has harmful effects for individuals with higher SC perfectionism by increasing their vulnerability to anxious arousal over the longer term. The two studies in Article 2 replicated and extended these findings, such that aggregated daily experiential avoidance across many stressful situations enhanced the vulnerability associated with anxiety sensitivity in explaining the link between SC perfectionism and daily negative affect.

Results with Model 1 across both articles support that the tendency to fearfully react to anxious symptoms based on beliefs that they are harmful or dangerous represents an important mechanism explaining SC perfectionistic individuals' vulnerability to distress. These findings are consistent with the only prior cross-sectional study supporting anxiety sensitivity as a mediator of the association between perfectionistic cognitions and symptoms of depression and anxiety (Pirbaglou et al., 2013). However, this thesis more stringently investigated anxiety sensitivity as a mediator for perfectionistic individuals by using a measure of trait perfectionism while testing these relations longitudinally (Article 1) and using repeated measures (Article 2).

Most importantly, results with Model 1 extend previous research by being the first to show that the vulnerability associated with anxiety sensitivity for individuals with higher SC perfectionism is conditional on experiential avoidance. In other words, results with Model 1 support that anxiety sensitivity becomes increasingly maladaptive as SC perfectionistic individuals engage in greater levels of experiential avoidance and make greater attempts to avoid or escape the anxious arousal they fear. Results with Model 1 are in line with previous theory (e.g., Kashdan et al., 2008) and research (e.g., Bardeen, 2015) that proposes that the vulnerability associated with anxiety sensitivity depends on how one responds to these feared states, such that attempts to avoid and escape rather than accept or tolerate unwanted experiences exacerbates the distress and dysfunction associated with them. Indeed, despite the strong correlations between SC perfectionism and experiential avoidance across both articles, this did not preclude the possibility of there being a range in the levels of experiential avoidance among individuals with higher SC perfectionism that uniquely predicted anxiety sensitivity and distress. By integrating previous theory and research, these findings support our contention that individuals who are higher in SC perfectionism and who make attempts to avoid their negative self-awareness experience heightened feelings of weakness, failure, and loss of control in response to anxiety, which reinforces their fears of anxious symptoms and distress (Kashdan et al., 2008; Moroz & Dunkley, 2019). Conversely, SC perfectionistic individuals who are more willing to tolerate negative self-referential thoughts and feelings appear to have less negative self-descriptions when they experience anxious symptoms, promoting greater attitudes of self-acceptance and self-compassion (Hayes et al., 2006; Moroz & Dunkley, 2019).

Model 2: Experiential Avoidance as Mediator between SC Perfectionism and Distress, Moderated by Anxiety Sensitivity

The moderated mediation analyses with Model 2 across both articles examined an alternative process whereby anxiety sensitivity was hypothesized to enhance the vulnerability associated with experiential avoidance for individuals with higher SC perfectionism. Results were mixed across Articles 1 and 2. In Article 1, support for moderated mediation was found such that the mediating effect of experiential avoidance was conditional on anxiety sensitivity. Specifically, experiential avoidance mediated the association between SC perfectionism with general distress and anxious arousal over two years for those with moderate or higher, but not lower, anxiety sensitivity. The longitudinal nature of the findings from Article 1 provides a crucial test of the theory that fearful reactions to anxiety-related symptoms promotes greater avoidance of aversive internal experiences over time, which, in turn, enhances vulnerability to

anxious and depressive symptoms for individuals with higher SC perfectionism over the longer term. Article 2 attempted to replicate and extend these findings by assessing these relations in daily living using ESM (Study 1) and daily diary (Study 2) methods. However, the moderated mediation hypotheses with Model 2 were not supported in either study in Article 2.

One possible explanation of the inconsistent results with Model 2 may involve the different timeframes assessed in Article 1 and 2 (i.e., yearly versus daily assessments). Anxiety sensitivity may only enhance the vulnerability associated with experiential avoidance over the longer-term (over years versus several days). Individuals who are higher in SC perfectionism and higher in anxiety sensitivity who repeatedly experience feelings of weakness, failure, and loss of control in response to anxious symptoms may become more and more preoccupied with avoiding the negative self-awareness brought on by their anxiety sensitivity over time (Heatherton & Baumeister, 1991; Otto et al., 2016). In other words, the costs associated with fearfully reacting to one's anxious symptoms may accumulate over the longer term through missed opportunities and greater suffering, which can lead to the rigid and inflexible use of experiential avoidance that has been shown to be maladaptive by preventing the pursuit of adaptive goal-directed behaviours (Hayes et al., 2004; Hayes et al., 1999). Conversely, the protective effects of lower anxiety sensitivity may also play out over the longer term. Specifically, SC perfectionistic individuals who are less fearful of their anxious symptoms may experience less negative self-referential thoughts and feelings in connection with them, allowing them to flexibly observe and tolerate such experiences and persist in committed action, which may create protective effects through decreased avoidance over the longer term (Hayes et al., 2006; Moroz & Dunkley, 2019).

Regardless of our mixed moderated mediation findings with Model 2, results across both articles in the present thesis provide further support for experiential avoidance as a mediator

explaining the relationship between SC perfectionism and distress outcomes. Article 1 demonstrated that experiential avoidance mediated the association between SC perfectionism and depressive and anxious symptoms over two years. Article 2 built on these findings by demonstrating that aggregated daily experiential avoidance across many stressful situations mediated the relation between SC perfectionism and aggregated daily negative affect. These results are in line with previous cross-sectional (e.g., Moroz & Dunkley, 2015) and longitudinal (e.g., Moroz & Dunkley, 2019) studies that have established experiential avoidance as an important mechanism explaining SC perfectionistic individuals' vulnerability to distress.

Taken together, results with Model 2 provide compelling support for experiential avoidance as a maladaptive self-regulatory strategy utilized by individuals with higher SC perfectionism which explains the chronic distress experienced by these individuals. It can be understood that individuals with greater SC perfectionism are motivated to engage in experiential avoidance to escape the negative self-referential thoughts and feelings brought on by their excessively harsh self-critical evaluations and chronic concerns about achievement and avoiding negative evaluations from others (Heatherton & Baumeister, 1991; Santanello & Gardner, 2007). Further, anxiety sensitivity *may* moderate the mediating effect of experiential avoidance for individuals with higher SC perfectionism, but possibly only over the longer term. While, additional research is certainly needed to clarify this relationship, one should also consider the difficulty to detect significant moderation effects in naturalistic studies when interpreting these mixed findings (e.g., McClelland & Judd, 1993).

Anxiety Sensitivity and Experiential Avoidance as Transdiagnostic Risk Factors

The present thesis also extended previous research by examining the relations among SC perfectionism, anxiety sensitivity, and experiential avoidance across multiple outcomes. For

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Model 1, results in Article 1 demonstrated that anxiety sensitivity explained SC perfectionistic individuals' vulnerability to anxious symptoms over two years, but not general distress or anhedonic depression. Results in Article 2 demonstrated that anxiety sensitivity explained risk for aggregated daily negative affect. Conversely, Model 2 results showed that experiential avoidance explained risk across general distress and anxious arousal in Article 1 and daily negative affect in Article 2 for individuals with higher SC perfectionism. Previous research has conceptualized both anxiety sensitivity (see Naragon-Gainey, 2010; Olatunji & Wolitzky-Taylor, 2009) and experiential avoidance (Kashdan et al., 2006; Kashdan & Rottenberg, 2010) as generalized vulnerability factors that confer transdiagnostic risk. While the findings from the present thesis certainly support this contention for experiential avoidance, results from Article 1 suggest that anxiety sensitivity might be most relevant in explaining SC perfectionistic individuals' vulnerability to anxious symptoms specifically, especially over the longer term. These findings highlight the need to consider interaction effects delineating the conditions under which the association between SC perfectionism and anxiety becomes stronger, rather than solely considering simple main effect models that have yielded inconsistent findings in the prospective relationship between SC perfectionism and anxious symptoms (Dunkley et al., 2020; Smith, Vidovic, et al., 2018; Tobin & Dunkley, 2021).

Adopting such an interpretation supports the conceptualization of experiential avoidance as a broader, higher order factor of psychological health that incorporates a pattern of responding to all forms of internal events (e.g., thoughts, emotions, bodily sensations; Kashdan & Rottenberg, 2010), while anxiety sensitivity may represent a more specific, lower-order factor of distress intolerance that involves arousal-related (i.e., anxiety) sensations specifically (e.g., Mitchell et al., 2013). Indeed, while relations have been found between anxiety sensitivity across symptom domains, it is considered to be a critical component of the etiology of anxious symptomatology (e.g., Naragon-Gainey, 2010). Thus, anxiety sensitivity may be more strongly related to SC perfectionistic individuals' fears of weakness, failure, loss of control, or negative evaluation, which in turn explains their vulnerability to anxious arousal. Experiential avoidance might relate more broadly to both SC perfectionistic individuals' anxious fears of weakness, loss of control, and rejection, as well as depressive themes of helplessness, withdrawal, and defeat, which in turn explains their vulnerability to both anxious and depressive symptoms (Blatt, 1995; Dunkley et al., 2020).

SC Perfectionism Distinguished from PS Perfectionism

In contrast to our findings with SC perfectionism, PS perfectionism was unrelated or weakly related to anxiety sensitivity, experiential avoidance, and our outcome measures in both Articles 1 and 2. In Article 1 and Study 2 of Article 2, both moderated mediation models were not significant when tested with PS perfectionism. However, in Study 1 of Article 2, Model 1 with PS perfectionism was significant, such that daily experiential avoidance moderated the indirect effect of PS perfectionism on daily negative affect through anxiety sensitivity. These significant findings should be interpreted cautiously given the failure to replicate these results across the two other studies of the present thesis. Nevertheless, these results might be understood within the context of previous research that has shown that individuals higher in PS perfectionism tend to engage in a greater range of coping and emotion regulation strategies, as well as more adaptive strategies than individuals higher in SC perfectionism (e.g., Vois & Damian, 2020). The vulnerability associated with utilizing such maladaptive self-regulatory strategies may be offset for individuals with greater PS perfectionism by their utilization of additional, more adaptive strategies, permitting them to persist in flexible, values-informed and goal-directed behaviours

(Hayes et al., 2004). Taken as a whole, the findings from the present thesis largely support SC perfectionism as the more maladaptive dimension compared to PS perfectionism in relation to anxiety sensitivity, experiential avoidance, and the distress outcomes. These findings suggest that the negative self-evaluative features of SC perfectionism are primarily responsible for perpetuating anxiety sensitivity, experiential avoidance, and distress over time, rather than the higher personal strivings that are primarily representative of PS (see Stoeber & Otto, 2006).

Clinical Implications

Findings from the present thesis have important clinical implications that are important to consider given the literature finding that SC perfectionistic individuals are poor responders to traditional treatments (e.g., Kannan & Levitt, 2013; Löw et al., 2020). In addition, individuals higher in SC perfectionism have been shown to demonstrate resistance when their perfectionism is addressed directly in therapy, which further emphasizes the importance of identifying explanatory mechanisms that clarify why these individuals experience vulnerability to distress (Lundh, 2004). Findings from this thesis suggest the potential utility of interventions targeting anxiety sensitivity and experiential avoidance for individuals higher in SC perfectionism.

Although anxiety sensitivity and experiential avoidance tend to co-occur, on average, the findings from this thesis inform individualized clinical recommendations aiming to weaken the link between anxiety sensitivity and experiential avoidance among individuals with greater SC perfectionism, ultimately helping them become "an exception to an average" (Hayes, 2023, p. 1053). Our moderated mediation findings with Model 1 across both articles suggest that interventions aimed at decreasing experiential avoidance among individuals with higher SC perfectionism may be beneficial at reducing their anxiety sensitivity and, in turn, their distress on both a daily basis and over the longer-term. In other words, for clients with higher SC

perfectionism who demonstrate tendencies towards anxiety sensitivity and experiential avoidance, these findings emphasize that it may be beneficial to prioritize interventions targeted at reducing experiential avoidance over specifically addressing their anxiety sensitivity, as addressing their experiential avoidance may also reduce their anxiety sensitivity as well as their experience of psychological distress. The moderated mediation results with Model 2 in Article 1 suggest the opposite and highlight the potential utility of targeting anxiety sensitivity in individuals with higher SC perfectionism to reduce their experiential avoidance, and in turn, their anxious and depressive symptoms over time. However, this recommendation is not supported by the results in both studies included in Article 2, as anxiety sensitivity was not found to moderate the effects of experiential avoidance when predicting daily negative affect. Yet, results with Model 2 across both articles highlighted experiential avoidance as a simple mediator of the relation between SC perfectionism and distress outcomes. This finding further underscores the importance of targeting experiential avoidance to reduce distress among SC perfectionistic individuals (see Moroz & Dunkley, 2019).

Integrating the findings with both models, the findings from the present thesis suggest the potential utility of prioritizing interventions targeted at reducing experiential avoidance over anxiety sensitivity among individuals with greater SC perfectionism. By targeting experiential avoidance, SC perfectionistic individuals can work on letting go of the constant struggle to avoid negative internal experiences, which can also reduce the vulnerability associated with their anxiety sensitivity. Specifically, individuals with greater SC perfectionism who find anxiety-related sensations aversive, but who become more psychologically flexible and willing to experience and tolerate such sensations, may be better able to respond to the daily demands of anxiety-inducing situations and may even ultimately change their interpretations of such

sensations (i.e., experience a decrease in fear; Bardeen et al., 2014; Pickett et al., 2012). In other words, by weakening the link between anxiety sensitivity and experiential avoidance and increasing individuals' willingness to tolerate distress when it arises, this would allow the flexibility in behaviour necessary to pursue important goals and values, leading to decreased distress and greater vitality and resilience (e.g., Hayes et al., 1996).

Interventions from third-wave therapies, such as Acceptance and Commitment Therapy (ACT; Hayes et al., 1999) and Dialectical Behavior Therapy (DBT; Linehan, 1993), aim to reduce experiential avoidance by teaching individuals to nonjudgmentally accept, rather than reject or control, negative internal events while committing to effective, values-informed behaviours. Interventions from ACT and DBT, such as mindfulness, distress tolerance, and acceptance-based strategies, might help individuals with greater SC perfectionism reduce their experiential avoidance by reappraising and changing their responses to negative internal events. ACT and DBT strategies might allow individuals with higher SC perfectionism develop more self-acceptance by teaching these individuals to observe their inner experiences and accept them as they are rather than trying to control or escape them. Importantly, such an approach also does not confront these individuals perfectionistic beliefs directly, which tends to be met with resistance (Lundh, 2004). Further, developing greater mindfulness, distress tolerance, and selfacceptance might offset the impact of SC perfectionistic individuals' self-critical evaluations by fostering self-compassion.

Limitations and Future Directions

The current thesis possessed many methodological strengths, such as the use of large samples of community adults, the use of a three-wave longitudinal design, and the use of repeated measures approaches, such as experience sampling and daily diary methods. Nevertheless, there were limitations to the present research that warrant attention in future studies. The present thesis used self-report measures, which are susceptible to memory biases and distortions (e.g., Moskowitz, 1986). While Article 2 had the strength of including an experience sampling method (Study 1) and daily diaries (Study 2) with multiple reports, future research would benefit from using methods that require less retrospection to decrease recall distortions and memory biases, such as informant reports, assessment of observable behaviours, or interviews to supplement self-reports. It will be especially important for future research to replicate the present findings while considering these methodological improvements and different timeframes of assessment (shorter versus longer term designs) given the mixed results obtained across articles with Model 2 to clarify whether anxiety sensitivity moderates the effects of experiential avoidance for individuals with greater SC perfectionism.

An additional limitation is that Article 1 used the Revised Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011) to measure experiential avoidance. Conversely, Article 2 used adapted items from the Multidimensional Experiential Avoidance Questionnaire (MEAQ; Gámez et al., 2011), specifically the brief version (Gámez et al., 2014), to suit the daily repeated measures designs of both studies. While the AAQ-II is the most widely used measure of experiential avoidance, it has received criticism for being closely related to distress measures as well as not fully capturing the broader construct of psychological inflexibility, of which experiential avoidance is a facet (see Rochefort et al., 2018; Wolgast, 2014). However, Hayes and colleagues (2023) argue that the associations between the AAQ-II and distress measures do not negate its utility, such that AAQ scores are more informative in terms of guiding intervention efforts in comparison to broader distress measures which can only reflect a client's tendency to become distressed. Nevertheless, it is possible that the inconsistent results, particularly with Model 2, may be due to the utilization of different measures of experiential avoidance across studies. Although the controlling for distress outcomes in Article 1 might mitigate some of the concerns related to the AAQ-II, future research should assess experiential avoidance using both measures. Future research may also wish to examine the broader construct and other dimensions of psychological (in)flexibility which includes experiential avoidance as well as other facets, namely cognitive fusion, fixating on past or future, lacking contact with values, self-as-content, and inaction (e.g., Kashdan & Rottenberg, 2010). The use of measures designed to capture the different facets of psychological (in)flexibility, such as the Personalized Psychological Flexibility Index (Kashdan et al., 2020) can shed light on whether other facets of psychological (in)flexibility explain the relationship between SC perfectionism and distress outcomes.

The articles in the present thesis were comprised of samples of nonclinical community adults, of which the majority were female and Caucasian. It will be important for future research to examine the generalizability of our findings to male, racial/ethnic minority, and clinical (e.g., individuals with mood and/or anxiety disorders) samples. Finally, based on the findings from the present thesis, research is needed that tests the effectiveness of therapies aimed at reducing anxiety sensitivity and experiential avoidance in the treatment of depressive and anxious symptoms among individuals with higher SC perfectionism. Research examining the effectiveness of interventions from third-wave psychotherapies, such as ACT and DBT, among clients with greater self-critical perfectionism may offer promising directions for future research based on the findings from the current thesis.

Conclusion

The current thesis contributes to our understanding of the association between the personality vulnerability of self-critical perfectionism to distress outcomes. This thesis examined

whether different combinations of higher versus lower levels of anxiety sensitivity and experiential avoidance differentially related to the well-established relationship between SC perfectionism and distress outcomes. Moderated mediation results with Model 1 across the three studies included in two articles showed that experiential avoidance enhanced the vulnerability associated with anxiety sensitivity in explaining the relation between SC perfectionism and various distress outcomes. Moderated mediation results with Model 2, which examined whether the mediating effect of experiential avoidance was conditional on anxiety sensitivity, were mixed across both articles. Results with Model 2 provide additional support for experiential avoidance as a mediator between self-critical perfectionism and various distress outcomes as well as inconsistent support for anxiety sensitivity as a moderator of this indirect effect. This thesis highlights the importance of moving beyond main effects analyses when examining the effects of psychological vulnerability factors. Rather, the present thesis examined the effects of different combinations of high versus low levels of two closely related psychological vulnerabilities in predicting distress outcomes among SC perfectionistic individuals. By examining the effects of exceptions to the average, this may ultimately benefit the individualized treatment of depression and anxiety by allowing for more specific treatment recommendations that are tailored to an individual client's characteristics. These findings also highlight clinical implications and directions for future research with the goal of reducing vulnerability to depression and anxiety among individuals with greater self-critical perfectionism.

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Appendix: Tables and Figures from Supplementary Analyses in Article 1

Table A1

Moderated Mediation Model 1 Results with PS Perfectionism Predicting Time 3 General Distress and Anxious Arousal

	T2 Anxiety Sensitivity T3 General Dist					neral Distress			
Model S1a	В	SE	95% CI	sr^2	В	SE	95% CI	sr ²	
T1 PS Perfectionism (X)	0.20	0.59	[-0.96, 1.36]	.000	-0.71	0.87	[-2.42, 1.00]	.001	
T1 Exp. Avoidance (W)	0.21**	0.07	[0.07, 0.36]	.013	-	-	-	-	
T2 Anxiety Sensitivity (M)	-	-	-	-	0.16*	0.07	[0.02, 0.30]	.010	
$X \times W$	0.13*	0.05	[0.03, 0.23]	.010	-	-	-	-	
T1 Anxiety Sensitivity	0.63***	0.05	[0.52, 0.74]	.206	-	-	-	-	
T1 General Distress	0.04	0.05	[-0.05, 0.13]	.001	-	-	-	-	
T2 General Distress	-	-	-	-	0.58***	0.06	[0.46, 0.69]	.201	
Constant	4.04*	2.01	[0.07, 8.01]	-	15.63***	2.34	[11.02, 20.23]	-	
	R	2 = .55, <i>F</i> ((5, 291) = 71.71***		$R^2 = .37, F(3, 293) = 57.47 ***$				
		T2 Anx	iety Sensitivity		T3 Anxious Arousal				
Model S1b	В	SE	95% CI	sr^2	В	SE	95% CI	sr ²	
T1 PS Perfectionism (X)	0.27	0.58	[-0.87, 1.42]	.000	-0.14	0.42	[-0.97, 0.68]	.000	
T1 Exp. Avoidance (W)	0.22***	0.07	[0.09, 0.35]	.017	-	-	-	-	
T2 Anxiety Sensitivity (M)	-	-	-	-	0.16***	0.04	[0.09, 0.22]	.048	
X imes W	0.12*	0.05	[0.02, 0.22]	.008	-	-	-	-	
T1 Anxiety Sensitivity	0.60***	0.06	[0.49, 0.71]	.169	-	-	-	-	
T1 Anxious Arousal	0.16	0.08	[-0.00, 0.33]	.006	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.41***	0.05	[0.32, 0.51]	.159	
Constant	2.45	1.88	[-1.24, 6.15]	-	11.23***	1.08	[9.11, 13.35]	-	
	R	2 = .56, <i>F</i> ((5, 291) = 73.06***		R^2	= .37, <u>F (</u>	(3, 293) = 58.27***		

		T2 Experi	iential Avoidance		T3 General Distress				
Model S2a	В	SE	95% CI	Sr^2	В	SE	95% CI	sr ²	
T1 PS Perfectionism (X)	0.38	0.39	[-0.39, 1.14]	.001	-0.66	0.85	[-2.33, 1.01]	.001	
T1 Anxiety Sensitivity (W)	0.03	0.04	[-0.04, 0.10]	.001	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.38***	0.10	[0.18, 0.58]	.030	
X imes W	-0.01	0.03	[-0.07, 0.05]	.000	-	-	-	-	
T1 Experiential Avoidance	0.76***	0.05	[0.66, 0.85]	.292	-	-	-	-	
T1 General Distress	0.02	0.03	[-0.04, 0.08]	.001	-	-	-	-	
T2 General Distress	-	-	-	-	0.49***	0.06	[0.37, 0.62]	.125	
Constant	1.58	1.23	[-0.04, 0.08]	-	16.71***	2.33	[12.12, 21.29]	-	
	R^2	5, 291) = 107.28***	$R^2 = .39, F(3, 293) = 62.43 ***$						
		T2 Experi	iential Avoidance		T3 Anxious Arousal				
Model S2b	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2	
T1 PS Perfectionism (X)	0.41	0.39	[-0.36, 1.17]	.001	-0.03	0.42	[-0.85, 0.79]	.000	
T1 Anxiety Sensitivity (W)	0.03	0.04	[-0.05, 0.10]	.001	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.20***	0.04	[0.12, 0.29]	.048	
$X \times W$	-0.01	0.03	[-0.07, 0.05]	.000	-	-	-	-	
T1 Experiential Avoidance	0.77***	0.04	[0.68, 0.85]	.359	-	-	-	-	
T1 Anxious Arousal	0.05	0.06	[-0.07, 0.16]	.001	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.42***	0.05	[0.33, 0.52]	.174	
Constant	1.40	1.38	[-1.33, 4.12]	-	10.88***	1.08	[8.76, 13.01]	-	
	R^2	= .65, <i>F</i> (5, 291) = 107.31***	R^2	= .37, <i>F</i> ((3, 293) = 58.19***			

Moderated Mediation Model 2 Results with PS Perfectionism Predicting Time 3 General Distress and Anxious Arousal

Moderated Mediation Model 1 Results with Anxiety Sensitivity Physical Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 Anxiety Sensitivity Physical Concerns T3 General Di				eneral Distress				
Model S1c	В	SE	95% CI	sr^2	В	SE	95% CI	sr ²	
T1 SC Perfectionism (X)	0.32	0.32	[-0.31, 0.95]	.002	4.05***	1.01	[2.08, 6.03]	.033	
T1 Exp. Avoidance (W)	0.03	0.03	[-0.03, 0.09]	.002	-	-	-	-	
T2 AS Physical Concerns (M)	-	-	-	-	0.18	0.17	[-0.16, 0.52]	.002	
X imes W	0.08***	0.02	[0.03, 0.12]	.021	-	-	-	-	
T1 AS Physical Concerns	0.59***	0.05	[0.50, 0.68]	.304	-	-	-	-	
T1 General Distress	0.004	0.02	[-0.03, 0.04]	.000	-	-	-	-	
T2 General Distress	-	-	-	-	0.51***	0.06	[0.39, 0.62]	.151	
Constant	1.10	0.82	[-0.51, 2.71]	-	20.54***	2.57	[15.47, 25.60]	-	
	$R^2 = 47 F(5, 291) = 52 32 * * *$				$R^2 = .40, F(3, 293) = 64.64^{***}$				
	T2 Anx	tiety Sens	itivity Physical Conc	erns	T3 Anxious Arousal				
Model S1d	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	0.31	0.31	[-0.30, 0.91]	.002	1.47**	0.45	[0.59, 2.36]	.023	
T1 Exp. Avoidance (W)	0.02	0.03	[-0.03, 0.08]	.001	-	-	-	-	
T2 AS Physical Concerns (M)	-	-	-	-	0.30***	0.09	[0.12, 0.47]	.024	
$X \times W$	0.07**	0.02	[0.03, 0.12]	.020	-	-	-	-	
T1 AS Physical Concerns	0.57***	0.05	[0.48, 0.67]	.257	-	-	-	-	
T1 Anxious Arousal	0.05	0.03	[-0.02, 0.11]	.003	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.42***	0.05	[0.33, 0.51]	.171	
Constant	0.34	0.75	[-1.14, 1.83]	-	12.41***	1.09	[10.26, 14.56]	-	
	R ²	2 = .48, <i>F</i>	(5, 291) = 53.00***		R^2	= .39, <i>F</i> ((3, 293) = 61.40***		

Moderated Mediation Model 2 Results with Anxiety Sensitivity Physical Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 Experiential Avoidance				T3 General Distress						
Model S2c	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2			
T1 SC Perfectionism (X)	1.92***	0.52	[0.90, 2.93]	.016	3.14**	1.11	[0.95, 5.33]	.016			
T1 AS Physical Concerns (W)	-0.10	0.08	[-0.24, 0.05]	.002	-	-	-	-			
T2 Exp. Avoidance (M)	-	-	-	-	0.23*	0.11	[0.01, 0.45]	.009			
X imes W	0.19*	0.08	[0.04, 0.34]	.007	-	-	-	-			
T1 Experiential Avoidance	0.70***	0.05	[0.60, 0.80]	.227	-	-	-	-			
T1 General Distress	0.01	0.03	[-0.05, 0.07]	.000	-	-	-	-			
T2 General Distress	-	-	-	-	0.46***	0.06	[0.33, 0.59]	.106			
Constant	2.68*	1.26	[0.20, 5.15]	-	20.19***	2.56	[15.15, 25.24]	-			
	R^2	$R^2 = .67, F(5, 291) = 118.28 ***$					R^2 = .40, $F(3, 293) = 66.45^{***}$				
		T2 Exper	iential Avoidance		T3 Anxious Arousal						
Model S2d	В	SE	95% CI	Sr ²	В	SE	95% CI	sr^2			
T1 SC Perfectionism (X)	1.93***	0.50	[0.94, 2.92]	.017	0.92	0.54	[-0.15, 1.99]	.006			
T1 AS Physical Concerns (W)	-0.11	0.08	[-0.27, 0.04]	.002	-	-	-	-			
T2 Exp. Avoidance (M)	-	-	-	-	0.15**	0.05	[0.05, 0.25]	.017			
X imes W	0.19*	0.08	[0.03, 0.34]	.007	-	-	-	-			
T1 Experiential Avoidance	0.70***	0.05	[0.60, 0.79]	.246	-	-	-	-			
T1 Anxious Arousal	0.05	0.05	[-0.06, 0.15]	.000	-	-	-	-			
T2 Anxious Arousal	-	-	-	-	0.43***	0.05	[0.33, 0.52]	.176			
Constant	2.14	1.31	[-0.44, 4.72]	-	11.51***	1.13	[9.28, 13.74]	-			
	R^2	= .67, <i>F</i> (5, 291) = 118.64***		R^2	= .38, <i>F</i> ((3, 293) = 59.70***				

Moderated Mediation Model 1 Results with Anxiety Sensitivity Cognitive Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 Anxiety Sensitivity Cognitive ConcernsT3 General Distres					neral Distress			
Model S1e	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	0.57	0.32	[-0.06, 1.21]	.005	3.96***	1.04	[1.92, 6.01]	.030	
T1 Exp. Avoidance (W)	0.03	0.03	[-0.03, 0.10]	.002	-	-	-	-	
T2 AS Cognitive Concerns (M)	-	-	-	-	0.15	0.18	[-0.21, 0.50]	.001	
X imes W	0.11***	0.02	[0.06, 0.15]	.038	-	-	-	-	
T1 AS Cognitive Concerns	0.57***	0.06	[0.46, 0.68]	.171	-	-	-	-	
T1 General Distress	0.02	0.02	[-0.02, 0.06]	.002	-	-	-	-	
T2 General Distress	-	-	-	-	0.51***	0.06	[0.39, 0.62]	.143	
Constant	0.31	0.82	[-1.30, 1.92]	-	20.69***	2.58	[15.61, 25.78]	-	
	R^2	P = .53, F	(5, 291) = 66.30***		$R^2 = .40, F(3, 293) = 64.40^{***}$				
	T2 Anxi	iety Sens	itivity Cognitive Cond	cerns	T3 Anxious Arousal				
Model S1f	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	0.60	0.31	[-0.01, 1.21]	.006	1.15*	0.48	[0.21, 2.10]	.012	
T1 Exp. Avoidance (W)	0.03	0.03	[-0.03, 0.08]	.001	-	-	-	-	
T2 AS Cognitive Concerns (M)	-	-	-	-	0.30***	0.09	[0.13, 0.48]	.024	
X imes W	0.10***	0.02	[0.06, 0.15]	.035	-	-	-	-	
T1 AS Cognitive Concerns	0.53***	0.05	[0.42, 0.63]	.144	-	-	-	-	
T1 Anxious Arousal	0.11***	0.03	[0.05, 0.18]	.018	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.41***	0.05	[0.32, 0.51]	.166	
Constant	-1.18	0.75	[-2.64, 0.29]	-	12.49***	1.09	[10.33, 14.64]	-	
	R^2	P = .55, F	(5, 291) = 70.86***		R^2	= .39, <i>F</i> ((3, 293) = 61.53***		

Moderated Mediation Model 2 Results with Anxiety Sensitivity Cognitive Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 Experiential Avoidance					T3 Ge	T3 General Distress		
Model S2e	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	2.00***	0.52	[0.98, 3.03]	.017	3.14**	1.11	[0.95, 5.33]	.016	
T1 AS Cognitive Concerns (W)	-0.05	0.10	[-0.24, 0.14]	.000	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.23*	0.11	[0.01, 0.45]	.009	
$X \times W$	0.20*	0.09	[0.03, 0.37]	.006	-	-	-	-	
T1 Experiential Avoidance	0.69***	0.05	[0.59, 0.79]	.211	-	-	-	-	
T1 General Distress	0.001	0.03	[-0.06, 0.06]	.000	-	-	-	-	
T2 General Distress	-	-	-	-	0.46***	0.06	[0.33, 0.59]	.106	
Constant	3.09*	1.34	[0.45, 5.72]	-	20.19***	2.56	[15.15, 25.24]	-	
	$R^2 = .67, F(5, 291) = 117.31^{***}$				$R^2 = .40, F(3, 293) = 66.45^{***}$				
		T2 Expe	riential Avoidance		T3 Anxious Arousal				
Model S2f	В	SE	95% CI	sr ²	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	1.99***	0.51	[0.99, 2.99]	.017	0.92	0.54	[-0.15, 1.99]	.006	
T1 AS Cognitive Concerns (W)	-0.07	0.10	[-0.26, 0.12]	.001	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.15**	0.05	[0.05, 0.25]	.017	
$X \times W$	0.19*	0.09	[0.02, 0.37]	.006	-	-	-	-	
T1 Experiential Avoidance	0.69***	0.05	[0.59, 0.78]	.223	-	-	-	-	
T1 Anxious Arousal	0.03	0.05	[-0.07, 0.14]	.000	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.43***	0.05	[0.33, 0.52]	.176	
Constant	2.48	1.35	[-0.18, 5.13]	-	11.51***	1.13	[9.28, 13.74]	-	
	R^2	=.67, <i>F</i> ((5, 291) = 117.52***		R^2	= .38, <i>F</i> ((3, 293) = 59.70***		

Moderated Mediation Model 1 Results with Anxiety Sensitivity Social Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 An	xiety Sen	sitivity Social Conce	Concerns T3 General Distress							
Model S1g	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2			
T1 SC Perfectionism (X)	0.24	0.35	[-0.45, 0.94]	.001	4.10***	1.04	[2.05, 6.15]	.032			
T1 Exp. Avoidance (W)	0.07	0.03	[-0.003, 0.13]	.006	-	-	-	-			
T2 AS Social Concerns (M)	-	-	-	-	0.05	0.16	[-0.25, 0.36]	.000			
$X \times W$	0.03	0.02	[-0.01, 0.08]	.003	-	-	-	-			
T1 AS Social Concerns	0.62***	0.05	[0.53, 0.71]	.288	-	-	-	-			
T1 General Distress	0.01	0.02	[-0.03, 0.05]	.000	-	-	-	-			
T2 General Distress	-	-	-	-	0.52***	0.06	[0.40, 0.63]	.160			
Constant	2.31*	0.93	[0.47, 4.14]	-	20.33***	2.62	[15.17, 25.50]	-			
	R^2	$R^2 = .56, F(5, 291) = 73.07***$					$R^2 = .40, F(3, 293) = 64.10^{***}$				
	T2 An	xiety Sen	sitivity Social Conce	rns	T3 Anxious Arousal						
Model S1h	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2			
T1 SC Perfectionism (X)	0.27	0.34	[-0.40, 0.95]	.001	1.63***	0.48	[0.68, 2.58]	.025			
T1 Exp. Avoidance (W)	0.07*	0.03	[0.01, 0.13]	.007	-	-	-	-			
T2 AS Social Concerns (M)	-	-	-	-	0.08	0.08	[-0.07, 0.24]	.003			
$X \times W$	0.03	0.02	[-0.01, 0.08]	.003	-	-	-	-			
T1 AS Social Concerns	0.62***	0.05	[0.53, 0.71]	.278	-	-	-	-			
T1 Anxious Arousal	0.01	0.03	[-0.05, 0.08]	.000	-	-	-	-			
T2 Anxious Arousal	-	-	-	-	0.46***	0.05	[0.37, 0.55]	.228			
Constant	2.36**	0.85	[0.69, 4.02]	-	11.94***	1.16	[9.66, 14.23]	-			
	R^2	2 = .56, <i>F</i> ((5, 291) = 73.06***		R^2	= .37, <i>F</i> (3, 293) = 56.08***				

Moderated Mediation Model 2 Results with Anxiety Sensitivity Social Concerns Predicting Time 3 General Distress and Anxious Arousal

	T2 Experiential Avoidance				T3 General Distress				
Model S2g	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2	
T1 SC Perfectionism (X)	1.87***	0.53	[0.83, 2.91]	.014	3.14**	1.11	[0.95, 5.33]	.016	
T1 AS Social Concerns (W)	0.05	0.07	[-0.09, 0.18]	.000	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.23*	0.11	[0.01, 0.45]	.009	
X imes W	0.17**	0.06	[0.04, 0.29]	.008	-	-	-	-	
T1 Experiential Avoidance	0.67***	0.05	[0.57, 0.77]	.204	-	-	-	-	
T1 General Distress	0.004	0.03	[-0.05, 0.06]	.000	-	-	-	-	
T2 General Distress	-	-	-	-	0.46***	0.06	[0.33, 0.59]	.106	
Constant	3.24**	1.23	[0.81, 5.67]	-	20.19***	2.56	[15.15, 25.24]	-	
	R^2	= .67, <i>F</i> (5, 291) = 119.11***		R^2 = .40, $F(3, 293) = 66.45$ ***				
		T2 Exper	iential Avoidance		T3 Anxious Arousal				
Model S2h	В	SE	95% CI	sr^2	В	SE	95% CI	sr^2	
T1 SC Perfectionism (<i>X</i>)	1.88***	0.51	[0.87, 2.89]	.015	0.92	0.54	[-0.15, 1.99]	.006	
T1 AS Social Concerns (W)	0.04	0.07	[-0.10, 0.18]	.000	-	-	-	-	
T2 Exp. Avoidance (M)	-	-	-	-	0.15**	0.05	[0.05, 0.25]	.017	
$X \times W$	0.17**	0.06	[0.04, 0.29]	.008	-	-	-	-	
T1 Experiential Avoidance	0.67***	0.05	[0.58, 0.76]	.225	-	-	-	-	
T1 Anxious Arousal	0.02	0.05	[-0.09, 0.12]	.000	-	-	-	-	
T2 Anxious Arousal	-	-	-	-	0.43***	0.05	[0.33, 0.52]	.176	
Constant	3.05*	1.26	[0.57, 5.52]	-	11.51***	1.13	[9.28, 13.74]	-	
	R^2	= .67, <i>F</i> (5, 291) = 119.15***		R^2	= .38, <i>F</i> (3, 293) = 59.70***		

Moderated Mediation Model 1 and Conditional Indirect Effects with Personal Standards (PS) Perfectionism



Model S1a: T1 PS Perfectionism \rightarrow T2 Anxiety Sensitivity \rightarrow T3 General Distress







Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 PS perfectionism and Time 3 general distress (Model S1a) or anxious arousal (Model S1b) through Time 2 anxiety sensitivity and moderated by Time 1 experiential avoidance. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 2 and Conditional Indirect Effects with Personal Standards (PS) Perfectionism



Model S2a: T1 PS Perfectionism \rightarrow T2 Experiential Avoidance \rightarrow T3 General Distress





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relation between Time 1 PS perfectionism and Time 3 general distress (Model S2a) or anxious arousal (Model S2b) through Time 2 experiential avoidance and moderated by Time 1 anxiety sensitivity. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 1 and Conditional Indirect Effects with Anxiety Sensitivity Physical Concerns



Model S1c: T1 SC Perfectionism \rightarrow T2 AS Physical Concerns \rightarrow T3 General Distress





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S1c) or anxious arousal (Model S1d) through Time 2 anxiety sensitivity (AS) physical concerns and moderated by Time 1 experiential avoidance. *p < .05; **p < .01; ***p < .001.

Moderated Mediation Model 2 and Conditional Indirect Effects with Anxiety Sensitivity Physical Concerns



Model S2c: T1 SC Perfectionism \rightarrow T2 Experiential Avoidance \rightarrow T3 General Distress





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relation between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S2c) or anxious arousal (Model S2d) through Time 2 experiential avoidance and moderated by Time 1 anxiety sensitivity (AS) physical concerns. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 1 and Conditional Indirect Effects with Anxiety Sensitivity Cognitive Concerns



Model S1e: T1 SC Perfectionism \rightarrow T2 AS Cognitive Concerns \rightarrow T3 General Distress

Mean Experiential Avoidance: Index of Moderated Mediation:

B = 0.084, *SE* = 0.151, 95% CI [-0.167, 0.457] Higher Experiential Avoidance (+1 SD): B = 0.236, SE = 0.359, 95% CI [-0.417, 1.036] *B* = 0.016, *SE* = 0.023, 95% CI [-0.027, 0.065]





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S1e) or anxious arousal (Model S1f) through Time 2 anxiety sensitivity (AS) cognitive concerns and moderated by Time 1 experiential avoidance. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 2 and Conditional Indirect Effects with Anxiety Sensitivity Cognitive Concerns



Model S2e: T1 SC Perfectionism \rightarrow T2 Experiential Avoidance \rightarrow T3 General Distress





Lower AS Cognitive Concerns (-1 SD):B = 0.169, SE = 0.109, 95% CI [-0.010, 0.414]Mean AS Cognitive Concerns: $B = 0.296^*, SE = 0.146, 95\%$ CI [0.046, 0.614]Higher AS Cognitive Concerns (+1 SD): $B = 0.433^*, SE = 0.221, 95\%$ CI [0.062, 0.923]Index of Moderated Mediation:B = 0.029, SE = 0.020, 95% CI [-0.001, 0.076]

Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S2e) or anxious arousal (Model S2f) through Time 2 experiential avoidance and moderated by Time 1 anxiety sensitivity (AS) cognitive concerns. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 1 and Conditional Indirect Effects with Anxiety Sensitivity Social Concerns



Model S1g: T1 SC Perfectionism \rightarrow T2 AS Social Concerns \rightarrow T3 General Distress





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relationship between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S1g) or anxious arousal (Model S1h) through Time 2 anxiety sensitivity (AS) social concerns and moderated by Time 1 experiential avoidance. * p < .05; ** p < .01; *** p < .001.

Moderated Mediation Model 2 and Conditional Indirect Effects with Anxiety Sensitivity Social Concerns



Model S2g: T1 SC Perfectionism \rightarrow T2 Experiential Avoidance \rightarrow T3 General Distress





Note. Conditional process models and bootstrapped conditional indirect effects of the indirect relation between Time 1 self-critical (SC) perfectionism and Time 3 general distress (Model S2g) or anxious arousal (Model S2h) through Time 2 experiential avoidance and moderated by Time 1 anxiety sensitivity (AS) social concerns. * p < .05; ** p < .01; *** p < .001.