

Promoting positive mental health among individuals with eating disorders: Investigating the role
of self-compassion

by

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This thesis consists of material all of which I authored or co-authored: see *Statement of Contributions* included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Statement of Contributions

Aleece Katan was the sole author for the General Introduction, bridging sections, and the General Discussion, which were written under the supervision of Dr. Allison Kelly and were not written for publication.

This thesis consists of three manuscripts that were written for publication. Exceptions to sole authorship of material are as follows:

Research presented in Study 1:

This research was conducted at the University of Waterloo by Aleece Katan under the supervision of Dr. Allison Kelly and was based on secondary analyses of data that were collected as part of a larger two-part study. The data used for Study 1 were from part one of this larger study, which used an ecological momentary assessment design to examine trajectories of shame and pride surrounding exercise behaviours in women with anorexia nervosa (Ma & Kelly, 2020). Aleece Katan contributed to the formulation of the research questions and data analytic plan in consultation with Dr. Allison Kelly. Aleece Katan conducted all formal analyses on the dataset previously prepared by Dr. Allison Kelly. Aleece Katan wrote the draft of the manuscript, to which Dr. Allison Kelly and Dr. Josie Geller contributed intellectual input.

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Research presented in Study 2:

This research was conducted at the University of Waterloo by Aleece Katan under the

supervision of Dr. Allison Kelly. This study utilized participant data collected by Aleece Katan. A subset of the data was previously analyzed for Aleece Katan's master's thesis and later publication (Katan & Kelly, 2021); however, the research questions and hypotheses in Study 2 of this dissertation are unique from those in the prior publication and were devised a priori during study development. Aleece Katan designed the study with consultation from Dr. Allison Kelly. Aleece Katan, Linda Sosa-Hernandez, and Giselle Kraus were responsible for collecting the data. Aleece Katan conducted data analyses and drafted the manuscript, which Dr. Allison Kelly reviewed and to which she contributed intellectual input.

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Research presented in Study 3:

This research was conducted at the University of Waterloo by Aleece Katan under the supervision of Dr. Allison Kelly and was based on secondary analyses of data that were collected as part of a larger study investigating changes in self-compassion and related variables, such as social safeness and self-criticism, during eating disorder treatment (Kelly & Carter, 2013).

Aleece Katan contributed to the formulation of the research questions and data analytic plan in consultation with Dr. Allison Kelly. Aleece Katan and Dr. Allison Kelly contributed to the data analyses on the dataset prepared by Dr. Allison Kelly. Aleece Katan wrote the draft of the manuscript, to which Dr. Allison Kelly and Dr. Jacqueline Carter contributed intellectual input.

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Abstract

There is a call in the eating disorders field to identify factors that not only reduce eating pathology, but that also promote positive mental health and well-being in individuals with eating disorders. Yet, little is known about factors that might accomplish both of these goals. Self-compassion refers to the desire to respond to one's own distress in a mindful, caring, and understanding manner, coupled with the motivation to prevent and alleviate it. Self-compassion has been found to be associated with reduced eating pathology in people with eating disorders, but no research has examined whether it might also give rise to more positive mental health in this population. However, theoretical and empirical research conducted in diverse non-clinical samples suggests that treating oneself in a self-compassionate manner, both on a given day or in general, can promote markers of positive mental health and well-being. Three longitudinal studies spanning different contexts, durations, and eating disorder populations sought to test the overarching hypotheses that treating oneself with more self-compassion than others or than one's typical level, such as on a given day or following brief periods of time, would be associated with increased markers of positive mental health (i.e., positive affect, social safeness, and adaptive coping behaviours) in individuals with eating disorders. Study 1 utilized a two-week daily diary design to explore whether daily and trait (i.e., average) levels of self-compassion promoted positive affect and social safeness (i.e., a sense of social connection and belonging) in a community sample of women with typical and atypical anorexia nervosa who were not seeking treatment for their eating disorder. Multilevel modelling revealed that, consistent with hypotheses, higher levels of self-compassion on a given day, than the previous day, and on average over the study period, were associated with greater positive affect and social safeness. In Study 2, a two-week daily diary investigated whether daily and trait levels of self-compassion

predicted adaptive coping behaviours in a community sample of women with symptoms of bulimia nervosa. In line with my hypotheses and the findings from Study 1, multilevel modelling revealed that natural upward fluctuations in self-compassion levels from day to day, and trait or average self-compassion levels over the study period, were generally associated with the use of more adaptive coping strategies. Study 3 examined the links between self-compassion and social safeness over a 12-week period in a transdiagnostic sample of individuals receiving inpatient or day hospital treatment for their eating disorder. Multilevel modelling revealed that, as hypothesized, periods of increased self-compassion were associated with a greater subsequent sense of social safeness. Further, consistent with my hypothesis, higher average levels of self-compassion over the course of the 12 weeks of eating disorder treatment were associated with more social safeness. In sum, the current findings largely lend support for my overarching hypothesis: that one's ability to treat themselves with more self-compassion than is typical for them, including on a given day or over a brief period of time, or than other people, is associated with improved positive mental health. Importantly, the current findings highlight the potential clinical benefits of incorporating self-compassion practices into both eating disorder treatments and the daily lives of individuals with eating disorders. This way of compassionate self-relating, which can be learned, may have a significant, multifaceted impact. Self-compassion interventions have already been shown to help reduce harmful eating behaviors in previous research; however, the current findings suggest that these practices might also enhance markers of positive mental health in eating disorder samples. Therefore, directly targeting self-compassion could provide an effective way to achieve the shared goals of both clinicians and individuals with eating disorders: reducing symptoms of the disorder and enhancing overall quality of life.

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Dedication

I dedicate this dissertation to my late Bubby, Miriam. Bubby, I know how proud you would have been to see me finally reach the finish line of this academic marathon and I feel you cheering me on from afar. You were the embodiment of true compassion, and you have and will continue to inspire the work I do within this field.

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General Introduction and Literature Review

Introduction to Eating Disorders

Definitions and Classification of Eating Disorders

Eating disorders are a group of insidious and severe mental disorders that are characterized by marked disturbances in eating behaviours, overall self-evaluation, and in some instances (i.e., anorexia nervosa) dangerously low body weight (American Psychiatric Association [APA], 2022). The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, Text Revision (DSM-5-TR) recognizes a total of five eating disorders: anorexia nervosa, bulimia nervosa, binge eating disorder, other specified feeding and eating disorders, and avoidant/restrictive food intake disorder (ARFID). However, anorexia nervosa, bulimia nervosa, and binge eating disorder are the most common eating disorders examined within the literature (Costandache et al., 2023).

Anorexia nervosa. Anorexia nervosa is characterized by a restriction of one's required energy intake leading to significantly low body weight, an intense fear of weight gain or becoming fat, and a distorted perception of one's own body shape or weight (APA, 2022). Individuals diagnosed with anorexia nervosa can be further differentiated into two subtypes, restricting type or binge-eating/purging type, based on the behavioural features of the disorder (APA, 2022). Individuals with anorexia nervosa restricting type achieve significant weight loss or maintain their low body weight via dieting, fasting, and/or excessively exercising, whereas those with binge-eating/purging type engage in recurrent episodes of binge eating and/or compensatory behaviours (e.g., self-induced vomiting, laxative use) to prevent weight gain (APA, 2022). The severity of the disorder is determined based on an individual's body mass

index (BMI), a metric of body fat based on one's height and weight, and ranges from mild (i.e., BMI of $\geq 17 \text{ kg/m}^2$) to extreme (BMI $< 15 \text{ kg/m}^2$; APA, 2022).

Bulimia nervosa. Bulimia nervosa is characterized by recurrent episodes of binge eating followed by inappropriate compensatory behaviors, both occurring at least once a week for a period of three months. Individuals with bulimia nervosa report an overall self-evaluation that is unduly influenced by their body shape and weight (APA, 2022). According to the DSM-5-TR (APA, 2022), a binge is defined as a discrete period of time (e.g., a 2-hour period) during which an individual consumes an objectively large amount of food, together with a perceived loss of control over their eating. In order to prevent weight gain, individuals with bulimia nervosa may engage in a number of compensatory behaviours, such as self-induced vomiting, caloric restriction, excessive exercise, or laxative misuse (APA, 2022). The frequency with which individuals engage in inappropriate compensatory behaviours determines the severity of the disorder, ranging from mild (i.e., engaging in an average of 1-3 inappropriate compensatory behaviours per week) to extreme (i.e., an average of 14 or more compensatory behaviours; APA, 2022).

Binge-eating disorder. Binge-eating disorder is characterized by recurrent binge eating episodes that occur at least once per week for three months (APA, 2022). These binge eating episodes are associated with eating more quickly than usual, eating until a point of discomfort, eating large quantities of food without feeling physically hungry, eating alone due to feelings of embarrassment, and/or feelings of guilt or disgust afterwards, and are associated with marked distress (APA, 2022). Unlike anorexia nervosa binge-eating/purging type or bulimia nervosa, individuals with binge-eating disorder refrain from the use of inappropriate compensatory behaviours. The severity of the disorder is specified based on the frequency of binge eating

episodes per week, ranging from mild (i.e., 1-3 binge-eating episodes per week) to extreme severity (i.e., 14 or more binge-eating episodes per week; APA, 2022).

Other Specified Feeding or Eating Disorders. Other Specified Feeding or Eating Disorders is a diagnostic category that applies to instances in which individuals present with eating- or feeding-related disturbances that cause significant distress and impairment but do not meet full diagnostic criteria for another feeding or eating disorder (APA, 2022). There are a number of presentations that might be specified using this “other specified” designation. For instance, atypical anorexia nervosa is used to describe cases in which individuals meet full criteria for anorexia nervosa, except for the low weight criterion (APA, 2022). Individuals who meet full diagnostic criteria for bulimia nervosa or binge-eating disorder but engage in disordered eating behaviours less frequently or for a shorter duration than required would be classified as bulimia nervosa (of low frequency and/or limited duration) or binge-eating disorder (of low frequency and/or limited duration), respectively (APA, 2022). Additional “other specified” diagnoses include purging disorder, in which an individual engages in recurrent purging behaviours (e.g., self-induced vomiting) in the absence of binge eating, and night eating syndrome, characterized by recurrent episodes of eating after awakening from sleep or by eating large quantities of food after an evening meal (APA, 2022).

Canadian population data estimates that approximately two to three percent of the population will meet diagnostic criteria for an eating disorder at any given point in time, equating to approximately 725,800 to 1,088,700 of Canadians (Statistics Canada, 2016; National Initiative for Eating Disorders, 2017). Specifically, findings from large-scale community-based studies conducted in Ontario, Canada suggests that the lifetime prevalence of anorexia nervosa is approximately 0.16% and 0.66% for individuals whose sex assigned at birth was male and

female, respectively. Further, the lifetime prevalence of bulimia nervosa based on this study is estimated to be 0.13% to 1.46% for individuals whose sex assigned at birth was male and female, respectively (Woodside et al., 2001; National Initiative for Eating Disorders, 2017). Despite the prevalence of eating disorders, a large proportion of individuals with eating disorders are never diagnosed (Bryant et al., 2022) or access treatment (Penwell et al., 2024), resulting in these individuals experiencing prolonged periods of suffering with the widespread consequences of the disorder.

Risk Factors for Eating Disorders

There is consensus within the literature that eating disorders are best understood as the product of complex interactions between biological, social, and psychological factors (Barakat et al., 2023; Culbert et al., 2015). Research into biological factors contributing to eating disorders often highlight the role of genetic factors and variations in gene expression (Culbert et al., 2015; Thornton et al., 2011). For instance, findings from twin and family studies have demonstrated that there is a moderate-to-high heritability of anorexia nervosa, bulimia nervosa, and binge-eating disorder, as well as disordered eating symptoms (Culbert et al., 2015). These findings suggest that eating disorders run in families, with familial studies demonstrating that an individual is 11 times more likely to develop anorexia nervosa, 9.6 times more likely to develop bulimia nervosa, and 2.2 times more likely to develop binge-eating disorder, if they have a familial history of the respective disorder (Thornton et al., 2011). While genetic factors might increase an individual's vulnerability to develop an eating disorder, genetic effects in and of themselves are not sufficient to causally predict the development of an eating disorder.

Socially, individuals' immediate environment, such as exposure to family members displaying disordered eating behaviours (Canals et al., 2009), as well as their broader cultural

climate, such as exposure to Western thin ideals (Keel & Klump, 2003), can contribute to a heightened risk of developing an eating disorder. There have been a range of social and environmental factors linked to the development of eating disorders. For instance, research suggests that children are at a greater risk of developing an eating disorder if they perceive a lack of emotional connectedness (Huemer et al., 2012) or warmth from their parents (Krug et al., 2016; Micali et al., 2017), if they observe their parents to be engaging in disordered eating behaviours (Watson et al., 2018; Watkins et al., 2011), and if they are subject to external criticism of their body shape or weight (Lydecker et al., 2018). Further, individuals who have been exposed to traumatic or abusive experiences, particularly early in life, are at an increased risk of developing an eating disorder, particularly binge/purge types (i.e., bulimia nervosa, binge-eating disorder, and anorexia nervosa-binge/purge type; Barakat et al., 2023). More broadly, leading sociocultural theories of eating disorders highlight the role of society's thin and muscularity ideals, suggesting that individuals internalize these ideals, become dissatisfied with their bodies, and engage in efforts to alter their bodies to more closely align with society's ideal body types (Keel & Klump, 2003).

Psychological factors, such as certain personality types or neurocognitive processes, have also been implicated in the etiology of eating disorders. For instance, longitudinal research generally suggests that negative emotionality, perfectionism, and impulsivity are predictive of disordered eating behaviours (Barakat et al., 2023). Further, impaired neurocognitive processes, such as deficits in cognitive flexibility or inhibitory control, are correlated with eating pathology, though future work is needed to determine the extent to which these processes precede the development of eating disorders (Culbert et al. 2015). Relatedly, research has highlighted the potential links between eating disorders and autism spectrum disorder, with the risk of

developing a feeding and/or eating disorder being higher in women with autism; however, little is known about the nature and potential mechanisms underlying these associations (Adams et al., 2024). Together, these biological, social, and psychological factors may interact with one another to increase an individual's vulnerability to an eating disorder.

Impact of Eating Disorders

There is a myriad of medical, psychological, and social costs associated with eating disorders (Klump et al., 2008). Physically, eating disorders can lead to brain atrophy (Kerem & Katzman, 2003; Mühlau et al., 2007), cardiac abnormalities (Casiero & Frishman, 2006), osteoporosis (Soyka et al., 2002), and electrolyte imbalances (Mehler, 2011). These medical consequences can persist post-recovery (Roberto et al., 2010) and increase the likelihood of chronic medical illnesses (Udo & Grilo, 2019) and premature death in affected individuals (Keel, et al., 2003; Mitchell & Crow, 2006). Cognitively, individuals with anorexia nervosa and bulimia nervosa display executive functioning deficits (e.g., challenges switching tasks), difficulty making decisions, and impulsive patterns of responding (Cavedini et al., 2004; Roberts et al., 2007; Stedal et al., 2021; Tchanturia et al., 2007). Such cognitive impairments, such as difficulties recalling visual information, have been associated with reduced quality of life in individuals with eating disorders (Hamatani et al., 2016).

Individuals with eating disorders also experience marked impairments in emotional functioning; this is evidenced by the high degree of comorbidity between eating disorders and mood, anxiety, post-traumatic stress, personality, and substance use disorders (Hambleton et al., 2022; Martinussen et al., 2016). Indeed, epidemiological research had found that approximately 87.3% of adults with anorexia nervosa, 94.4% with bulimia nervosa, and 93.8% with binge-eating disorder meet criteria for at least one additional psychiatric disorder (Udo & Grilo, 2019).

Further, findings consistently reveal that individuals with eating disorders, regardless of subtype, report challenges with emotion regulation (Brockmeyer et al., 2014; Ruscitti et al., 2016) and turn to more maladaptive emotion regulatory strategies in times of increased distress (Prefit et al., 2019). These emotion regulatory challenges are thought to contribute to the development and maintenance of eating pathology, such that restrictive and/or binge eating are often construed as a maladaptive way of evading unpleasant mood states (e.g., Haynos & Fruzzetti, 2011; Heatherton & Baumeister, 1991; Smyth et al., 2007).

Beyond the intrapersonal challenges experienced by individuals with eating disorders, converging evidence suggests that individuals with eating disorders experience marked interpersonal difficulties. Indeed, interpersonal challenges are considered a “core” part of eating disorders given that they may play a role in the development and maintenance of these disorders, as well as develop as a consequence of them (Connan et al., 2007; Hartmann et al., 2010; O’mahony & Hollwey, 1995; McIntosh et al., 2000). Research conducted in diverse eating disorder samples suggests that individuals with eating disorders experience greater levels of interpersonal distress than their non-clinical counterparts, including difficulties asserting their needs, feeling anxious in social situations, and being highly sensitive to perceived criticism or signs of rejection (Arcelus et al. 2013; Atlas, 2004; Hartmann, 2010; Troop et al., 2003).

Individuals with eating disorders have also been found to report deficits in their social skills (Arcelus et al., 2013; Grissett & Norvell, 1992; Wagner et al., 1987) and report greater impairments in social functioning across domains (e.g., at work/school, social/leisure, extended family; Herzog et al., 1986). These social impairments are thought to interfere with individuals’ abilities to develop and maintain meaningful relationships, and may contribute to the smaller social networks (Tiller et al., 1997), perceived lack of social support (Limbert, 2010; Makri et

al., 2022; Tiller et al., 1997), and overall feelings of loneliness (Levine, 2012; Makri et al., 2022) that are reported by individuals with eating disorders.

Finally, it is important to emphasize that the burden of eating disorders extends beyond the individual to friends, family, and society. For instance, carers, family members, and romantic partners of individuals with eating disorders can experience feelings of distress, hopelessness, and burnout (Batchelor, 2022; Huke & Slade, 2006; Treasure et al., 2001). From a societal perspective, eating disorders result in significant economic burden, ranging from costs to the health care system (Streatfeild et al., 2021; Striegel-Moore et al., 2008) to productivity costs incurred when affected individuals take time off work (e.g., Ling et al., 2016). In light of the medical, psychological, social, and societal implications of eating disorders, extensive efforts have been made to develop effective interventions aimed at ameliorating eating disorder symptoms in affected individuals.

Current Approaches to Eating Disorder Treatment

Over the past two decades, significant advancements have been made in the development and evaluation of psychotherapeutic interventions for eating disorders (Jansingh et al., 2020), as well as in the creation of national (Couturier, et al., 2020; Ontario Health, 2023a; Ontario Health, 2023b) and international practice guidelines (e.g., American Psychiatric Association, 2023; Hay et al., 2014; National Institute of Clinical Excellence, 2020) aimed at applying this research to guide treatment decisions. There is consensus within the literature, as well as among practice guidelines, that the majority of individuals with eating disorders would benefit from structured psychological treatment (Bryson et al., 2024). Outpatient treatment is typically considered the initial approach for individuals with eating disorders (Hilbert et al., 2017). However, clinical guidelines suggest that partial or full-time hospitalization may be necessary for those who do not

respond to outpatient care or who are at an increased risk for medical complications; this includes individuals with low body weight, physical deterioration (e.g., low heart rate), behavioral issues (e.g., refusing food), or environmental challenges (e.g., insufficient family support; Hilbert et al., 2017).

Cognitive and behavioral approaches are commonly recommended as the first-line treatment for eating disorders across various care settings (Costandache et al., 2023; Hilbert et al., 2017). Through the use of behavioural interventions and cognitive restructuring, these treatments aim both to target the core symptoms, such as restrictive eating and/or inappropriate compensatory behaviors, and to assist individuals in achieving and maintaining a healthy weight that is appropriate for their age and biological sex (Fairburn, 2008).

An increasing amount of research supports the effectiveness of Cognitive Behavioural Therapy-Enhanced (CBT-E) as the first-line treatment for adults with anorexia nervosa, bulimia nervosa, binge-eating disorder, and other specified feeding or eating disorders. Indeed, CBT-E is currently one of the most widely used and recommended approaches in the treatment of eating disorders (Hilbert et al., 2017; Kass, et al., 2013; Muratore & Attia, 2021). CBT-E, which was originally derived from Cognitive Behavioural Therapy for Bulimia Nervosa (CBT-BN), is an individualized and transdiagnostic approach aimed at addressing eating disorder pathology that underlies multiple eating disorders, such as an overevaluation of shape and weight, rather than a specific eating disorder diagnosis, such as anorexia nervosa (Fairburn, 2008, p. 23). There are various versions and intensities of CBT-E that are designed to meet individuals' unique treatment needs; these include protocols of longer duration for individuals with significantly low body weight or who are receiving care in inpatient or intensive outpatient facilities, a version for individuals under the age of 18, and a version adapted for group use (Fairburn, 2008).

Fairburn (2008), the founder of CBT-E, notes that the 20-session “focused” version that focuses exclusively on eating disorder pathology should be considered the “default” version, and thus, is considered suitable for the majority of individuals. A meta-analysis of 21 studies, ten of which were randomized control trials, demonstrated that CBT-E is an efficacious treatment for adults and older adolescents with a broad range of eating disorder diagnoses (Atwood & Friedman, 2019). These findings are corroborated by systematic reviews and meta-analyses evaluating the effectiveness of CBT-E for adults and adolescents in naturalistic, routine clinical settings, suggesting that clinicians who are trained in CBT-E can achieve similar outcomes to those in university research settings (Öst et al., 2024; Ryan et al., 2015; Wergeland et al., 2024). However, it is important to note that there is a limited body of literature comparing CBT-E to other forms of treatment, with existing findings suggesting that the effects of CBT-E on weight gain and recovery rates might be comparable to other forms of treatment, such as psychodynamic therapy or treatment as usual (Zipfel et al., 2014).

Several other behaviorally focused psychotherapies for anorexia nervosa, bulimia nervosa, and binge-eating disorder, have gained increased attention in clinical research and treatment. Third-wave cognitive-behavioral interventions, such as dialectical behavior therapy (DBT; Linehan, 2014) and acceptance and commitment therapy (ACT; Hayes et al., 2012), emphasize the role of acceptance and mindfulness in helping individuals better tolerate distress and reduce their reliance on maladaptive coping strategies. These interventions have been found to produce moderate-to-large improvements in eating disorder symptoms across different diagnoses, both immediately following treatment and at follow-up (Linardon et al., 2017; Linardon et al., 2019). However, meta-analytic findings indicate that these third-wave

approaches do not outperform traditional cognitive-behavioral therapy or other active treatments in general (Linardon et al., 2017).

Family-based approaches, such as Maudsley Family Therapy, are considered one of the most effective forms of treatment for children and adolescents with eating disorders. Family-based therapy heavily focuses on the process of weight restoration rather than the cognitive or affective parts of the disorder (Lock & Le Grange 2012). Parents play a crucial role in facilitating this process, similar to staff members on an inpatient unit (Lock & Le Grange 2012). There is extensive evidence to suggest that family-based therapy is effective at restoring weight and reducing eating pathology for children and adolescents with anorexia nervosa, particularly when provided in the early stages of the illness (Austin et al., 2024; Lock et al., 2010; Sim et al., 2004; Treasure et al., 2020). However, there is some evidence to support the use of family-based treatment for children and adolescents with bulimia nervosa (Le Grange, Lock, et al., 2003; Le Grange, Crosby, et al., 2007; Le Grange, 2015), as well as preliminary support for its use with adult populations (Chen et al., 2016).

In sum, there is compelling evidence to suggest that existing psychological interventions can effectively reduce eating disorder symptoms in affected individuals. However, long-term follow-up studies suggest that a significant proportion of individuals who receive treatment for their eating disorder are unable to sustain their treatment gains over extended periods of time (Eielsen et al., 2021; Miskovic-Wheatley et al., 2023). For instance, a six-year longitudinal study of individuals with eating disorders ($n = 793$) revealed that approximately 50-52% of individuals with anorexia nervosa and bulimia nervosa, 60-64% of individuals with binge-eating disorder, and 57-80% of individuals with an eating disorder not otherwise specified were considered recovered (i.e., no longer meeting DSM-IV or DSM-V criteria for an eating disorder) at follow-

up (Castellini et al., 2011). Moreover, relapse rates ranged from 16-26% for participants who were considered to be in full remission by the end of treatment (Castellini et al., 2011). A subsequent 17-year longitudinal study examined the outcomes of a transdiagnostic sample of adult patients ($n = 80$) who were previously admitted to an inpatient eating disorders unit. Findings revealed that, among the 62 living patients, approximately 50% had not recovered and 21% were partially recovered at follow-up (Eielsen et al., 2021). Perhaps more concerning than the low rates of remission is the fact that individuals who are considered remitted and recovered from their eating disorder continue to experience significantly more eating-related symptoms than healthy controls, such as increased body image disturbances (Eshkevari et al., 2013), body dissatisfaction (Harper et al., 2017), and lower body mass index (Tomba et al., 2019). These findings suggest that, although some individuals experience reductions in eating pathology following traditional eating disorder treatment, a considerable number continue to be impacted by residual symptoms. As such, there is potential for enhancing current interventions to more effectively meet the needs of individuals with eating disorders.

Several studies across eating disorder samples demonstrate that individuals with eating disorders also continue to exhibit markers of poor mental health and lower quality of life following eating disorders treatment (Ackard et al., 2014; Bloks et al., 2001; Brockmeyer et al., 2013; Daley et al., 2008; Harrison et al., 2014; Holtkamp et al., 2005; Tomba et al., 2017; Tomba et al., 2019). For instance, research suggests that individuals who no longer meet diagnostic criteria for an eating disorder following treatment continue to report poorer quality of life in psychological (e.g., thinking and feeling negatively about themselves), cognitive (e.g., difficulties concentrating), as well as work and school domains (e.g., poor performance or leaves of absence) relative to healthy controls (Ackard et al., 2014; Tomba et al., 2019). Further,

recovered individuals with both anorexia nervosa (Brockmeyer et al., 2013) and bulimia nervosa (Daley et al., 2008) report having lower self-esteem than healthy controls. While findings suggest that there are improvements in psychological well-being following treatment, these post-treatment levels of well-being continue to be lower than those reported by healthy controls (Tomba et al., 2017). Individuals with eating disorders who receive treatment and are considered medically recovered also continue to experience more social impairments relative to healthy controls, such as experiencing a lack of pleasure and interest in social activities, difficulties establishing and maintaining close relationships, having fewer positive social relationships with others, and being more interpersonally sensitive than individuals without eating disorders (Harrison et al., 2014; Holtkamp et al., 2005; Tomba et al., 2017). Together, these findings underscore the importance of continuing to investigate psychological interventions that not only reduce eating disorder symptomology, but also address the psychosocial impairments associated with the disorder.

Perspectives on Eating Disorder Recovery

Understanding definitions and perspectives on eating disorder recovery is critical when contextualizing the efficacy of current approaches to eating disorders treatment. Although traditional definitions of eating disorder recovery exclusively focused on the physical (e.g., body mass index) and behavioural (e.g., abstinence from binge eating and purging) indicators of change, contemporary research emphasizes the importance of also considering psychological/cognitive factors (e.g., body image disturbances; Bachner-Melma et al., 2006; Bardone-Cone et al., 2018; Bardone-Cone et al., 2010). Problematically, no unitary definition of recovery exists at present, resulting in difficulties assessing the effectiveness of interventions for individuals with eating disorders, both in research and clinical contexts (Bardone-Cone et al.,

2018). Thus, there has been a call in the literature to establish a more comprehensive and holistic definition of recovery (Bardone-Cone et al., 2018), with increased efforts to incorporate the voices of individuals with lived experience who are experts in the experience of navigating eating disorders and the process of recovery (e.g., Kenny & Lewis, 2023; Musić et al., 2022).

Research examining the perspectives of individuals with lived experience suggests that the overemphasis on physical and behavioural markers of recovery overlooks the perceived importance of psychosocial factors, such as quality of life, social connection, and the ability to adaptively cope with challenges (Björk & Ahlström, 2008; de Vos et al., 2017; Linville et al., 2012). Qualitative findings indicate that individuals with lived experience perceive healthy social relationships (e.g., having warm, satisfying, and trusting relationships with others that are pleasurable; Björk & Ahlström, 2008; Bowlby et al., 2015; Darcy et al., 2010; de Vos et al., 2017; Kenny et al., 2019), the ability to cope with negative emotions (e.g., noticing, allowing, and tolerating negative emotions; Björk & Ahlström, 2008; Federici & Kaplan, 2007), and psychological well-being (e.g., positive feelings about oneself and one's worth; Noordenbos & Seubring, 2006; Kenny et al., 2019) as essential components of eating disorder recovery. The development of adaptive coping strategies to help individuals more effectively manage challenging emotions or situations is also considered to be imperative to the recovery process by individuals who have previously undergone treatment (McDonald et al., 2021). Finally, a handful of studies also suggest that individuals with lived experience report that learning how to be kind, caring, and understanding toward themselves—rather than self-critical—is an important part of the recovery process (Björk & Ahlström, 2006; Federici & Kaplan, 2007).

Concerningly, there appears to be notable discrepancies between how clinicians and those with lived experience perceive the factors that are important to eating disorder recovery.

Although patients and clinicians tend to agree that abstaining from weight-control behaviours and having a more balanced overall self-evaluation, for example, are central to recovery, patients perceive psychological, emotional, and social factors to be substantially more important to recovery than clinicians do (Emanuelli et al., 2012; Noordenbos & Seubring, 2006). This overemphasis on behavioural factors and underemphasis on psychosocial factors is also reflected in the outcomes researchers tend to focus on in the field of eating disorder research. For instance, a systematic review of 126 studies examining predictors of eating disorder treatment outcomes revealed that over 80% of the included studies used symptom remission as the primary outcome variable (Vall & Wade, 2015). Together, these findings highlight an important call in the literature—particularly from individuals with lived eating disorder experience—to broaden the focus of research and interventions to encompass domains related to positive mental health.

Beyond Symptom Reduction: The Importance of Positive Mental Health

Conceptualizing Mental Health: The Dual-Continuum of Mental Health

Traditionally, mental health has been conceptualized on a single bipolar continuum, with positive mental health and negative mental health existing on opposing ends on the same continuum (Keyes, 2005). According to these early conceptualizations, (positive) mental health and mental illness are considered to be mutually exclusive states, such that an individual is *either* considered mentally well or mentally ill (Iasiello & Van Agteren, 2020; Keyes, 2005). These early conceptualizations were reasonable given that the empirical research on the etiology and treatment of psychopathology advanced at a faster rate than personality psychology, the latter of which has largely informed theories on positive mental health (Keyes, 2005; Smith, 1959). In support of this traditional bipolar model of mental health were the consistent findings that individuals who did not experience symptoms of mental illness, such as anxiety or depression,

generally functioned better than those who did (Keyes, 2005; Sartorius, 2001). Over time, the concept of mental health became virtually synonymous with the absence of mental illness. Consequently, clinical research and interventions have primarily focused on targeting symptoms of mental illness in an effort to improve overall mental health (Iasiello & Van Agteren, 2020).

The bipolar model of mental health has been widely criticized within the literature, with researchers rejecting the assumption that the absence of mental illness is sufficient for assuming overall mental health (Herron & Trent, 2000; Iasiello & Van Agteren, 2020; Jahoda, 1958). For instance, many have criticized the arbitrary nature of the point on the continuum where an individual transitions from a state of mental illness to mental health, the lack of consideration of sociocultural factors that might impact this point on the continuum, as well as the apparent sense of hopelessness associated with attempting to improve one's mental health if they are diagnosed with a mental illness (Herron & Trent, 2005; Iasiello & Van Agteren, 2020). Together, these early criticisms have paved the way for alternative conceptualizations of mental health.

A dual-continuum or dual-factor model has been proposed as an alternative to the bipolar model of mental health, offering a more holistic conceptualization of mental health (Keyes, 2005). According to this dual-continuum model, mental health is considered to be more than the mere absence of illness, and instead, is a "complete" state that includes positive mental health and well-being (Iasiello & Van Agteren, 2020; Keyes et al., 2002; Keyes, 2005; Lamers, 2012; Seligman & Csikszentmihalyi, 2000; Westerhof & Keyes, 2010). Thus, this model conceptualizes mental illness and positive mental health as two distinct yet correlated constructs, with the latter referring to feeling good, such as by experiencing positive emotions, and functioning well in life, such as by creating and maintaining meaningful interpersonal relationships or managing complex environmental demands (Keyes, 2005). Accordingly,

individuals can simultaneously vary in the extent to which they experience both symptoms of mental illness and positive mental health. Consistent with this dual-continuum model of mental health is the published definition of mental health by the World Health Organization (WHO), which states that mental health is more than the absence of illness and defines it as “a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community” (WHO, 2022, para. 1).

Support for the Dual-Continuum of Mental Health. There have been extensive efforts made to determine whether the association between mental health and mental illness is best captured by a bipolar or dual-continuum model. In his initial test of the dual-continuum model, Keyes (2005) examined the associations between mental health and mental illness using a nationally representative sample of 3,032 adults, ages 25 to 74, in the United States. A confirmatory factor analysis revealed that a model with mental health and mental illness entered as two separate, but related, factors proved to be a better fit for the data than the single-factor model in which mental health and mental illness were entered as a single dimension. Keyes (2005) concluded that these findings lend support for the proposed dual-continua model of mental health.

More recently, Iasiello and van Agteren (2020) conducted a scoping review of the literature empirically testing whether mental health and mental illness are indeed two distinct constructs. A total of 81 peer-reviewed articles of varying methodological designs (i.e., cross-sectional, longitudinal, mixed-methods, and experimental intervention) were included in the review. These studies included data from a total of 20 countries, participants across the lifespan (age range = 10.5 -70.3 years), and from both clinical ($n = 13$) and non-clinical ($n = 47$) populations. Further, the majority of studies contained sample sizes greater than 500 people ($n =$

50), with 38 of the studies containing samples of more than 1,000 people. Findings from this scoping review revealed that, across studies, the data best fit the two-factor model proposed by Keyes (2005), further supporting the theory that positive mental health and mental illness operate as two distinct constructs with some degree of overlap.

Beyond obtaining statistical support for the factor structure of this model, researchers have queried whether it is clinically possible for an individual with symptoms of a mental illness to experience positive mental health. Indeed, Huppert (2005) noted that it is difficult to imagine an individual who is experiencing severe psychopathology, such as severe depression, who is also able to function well psychologically. However, findings across clinical populations have empirically demonstrated that individuals are able to experience moderate-to-high levels of mental health despite the presence of psychopathology. For instance, qualitative data gathered from individuals with schizophrenia reveal that these individuals can continue to enjoy positive social relationships, meaningful work, physical health, and positive emotions, despite the presence of severe mental illness (Eklund et al., 2012). A large national study ($N = 3,032$) conducted in the United States found that, among the 14.1% of the adult population that met diagnostic criteria for major depressive disorder, two thirds were considered to be “flourishing” (i.e., defined as having optimal levels of positive mental health; Keyes, 2005) or to have moderate mental health (Keyes, 2002). The 2012 Canadian Community Health Survey–Mental Health ($n = 25,113$ households, representing 28.3 million Canadians) revealed that approximately 10.1% of Canadians aged 15 years or older (i.e., approximately 2.8 million Canadians) met diagnostic criteria for at least one mental disorder, 4.5% and 4.7% of whom endorsed flourishing or moderate mental health, respectively (Gilmour, 2014). More broadly, cross-sectional research involving individuals diagnosed with mood (Schotanus-Dijkstra et al.,

2019; Seow et al., 2016), anxiety (Schotanus-Dijkstra et al., 2019), personality (Cramer et al., 2006), and developmental disorders (Mazurek et al., 2013) consistently shows that while individuals with these conditions report poorer mental health compared to the general population, there is significant variation in the extent to which they experience markers of positive mental health, even in the presence of psychopathological symptoms. These findings further suggest that mental health and mental illness are distinguishable from one another.

Beyond research conducted at the between-persons level, recent research utilizing ecologically valid approaches has suggested that daily fluctuations in positive mental health is also possible *within* individuals with diagnosable mental illness. For instance, using a two-week daily diary design, Kashdan and McKnight (2013) demonstrated that although individuals with social anxiety disorder *generally* reported lower levels of well-being than healthy controls, there was significant variability in the extent to which individuals with social anxiety disorder endorsed different indicators of well-being from one day to the next. In other words, despite the persistent presence of mental illness (i.e., social anxiety disorder), individuals were still able to experience some days of greater well-being, such as more positive emotions or improved self-esteem, than others (Kashdan & McKnight, 2013). Similarly, using an eight-day daily diary paradigm, Panaite and Cohen (2021) found that individuals who met criteria for depression continued to report day-to-day changes in positive affect, the number of positive events they experienced, and the extent to which they had positive interactions with others. Future research is needed to further elucidate the extent to which markers of positive mental health fluctuate within individuals with mental illness, but these preliminary results indicate that even individuals experiencing significant mental health concerns are capable of experiencing changes in their positive mental health from one day to the next.

De Vos and colleagues (2018) were the first to explore whether the dual continuum of mental health could be applied to eating disorder populations, examining different dimensions of well-being (i.e., social, emotional, and psychological well-being), in a sample of Dutch individuals with eating disorders who were applying for outpatient treatment ($n = 468$ females). The authors examined a transdiagnostic sample of individuals with eating disorders for their investigation, many of whom reported eating disorders of long duration ($M_{\text{duration}} = 10.9$ years) and having received previous psychiatric treatment (i.e., 85% of the sample). Consistent with the dual continuum model of mental health, the authors found moderate to high-moderate negative correlations between markers of well-being and psychopathology, suggesting these to be related but distinguishable phenomena. Interestingly, despite the presence of severe eating pathology, approximately 60.9% ($n = 285$) of the sample reported moderate levels of well-being, and 13% ($n = 61$) reported high well-being or flourishing. A subsequent network analysis study conducted by de Vos and colleagues (2021) provided further support for the dual continuum model of mental health in individuals with eating disorders ($n = 905$), demonstrating that different domains of mental health and eating disorder symptomology were weakly to moderately related to one another. Taken together, and in line with conclusions by de Vos et al. (2021), these results underscore the importance of adopting a broader focus on mental health and well-being in the psychological treatment of eating disorders, rather than exclusively focusing on psychopathology.

The Need to Address Positive Mental Health in People with Eating Disorders

To date, eating disorder researchers, clinicians, and treatment developers have almost exclusively focused on treating the symptoms of ‘mental illness’ in individuals with eating disorders – that is, the physical (e.g., body mass index; BMI) and behavioural (e.g., binge eating,

purging, dietary restriction) symptoms of the disorder. The primary focus on eating disorder symptoms within the literature is understandable given the myriad of health-related consequences associated with the physical and behavioural aspects of these disorders. However, in step with the expanded definitions of mental health put forth by Keyes (2005) and the World Health Organization (2022), and more recent perspectives on recovery (e.g., Kenny et al., 2019), I would argue that the paucity of research on positive mental health in the eating disorders is problematic for several reasons.

First, individuals with eating disorders experience impairments in domains outside of their eating, such as in their interpersonal relationships (Broberg et al., 2001; Hartmann et al., 2009), general affect (Kitsantas et al., 2003), and ability to cope with adversity (Ball & Lee, 2000; Bloks et al., 2001; Corstorphine et al., 2007; Wagener & Much, 2010). Collectively, these impairments might reduce motivation for eating disorder treatment (Pauli et al., 2017) and hinder treatment outcomes (Beresin et al., 1989; Cockell et al., 2004; Davies et al., 2011), while also negatively impacting quality of life (Jenkins et al., 2011), which is undesirable in and of itself. Second, existing eating disorders interventions are typically only moderately effective at ameliorating eating pathology and fail to restore indicators of well-being (e.g., social and emotional functioning) to non-clinical levels, even after symptoms are successfully ameliorated (Abraham et al., 2006; de la Rie, 2005; Keel et al., 2000; Rorty et al., 1999). Aside from leaving individuals with eating disorders in a state of suboptimal mental health, these residual impairments can leave individuals vulnerable to future relapses (Keel et al., 2005). Finally, there is a disparity between the ways in which clinicians and individuals with eating disorders construe eating disorder recovery, such that affected individuals rank psychological, emotional, and social criteria, such as “being in touch with one’s own feelings,” and “being able to make contact with

others,” as more important to their recovery than clinicians (Emanuelli et al., 2012); however, these criteria are not the primary target of current interventions.

There is an apparent need to promote positive mental health among individuals with eating disorders; yet little is known about how to do so. One proposed approach has been the use of positive psychology interventions (e.g., Enrique et al., 2018; Enrique et al., 2020; Harrison et al., 2015) which aim to promote positive emotions, behaviours (e.g., problem-solving strategies) and cognitions (Schueller & Parks, 2014; Parks & Biswas-Diener, 2013). To my knowledge, only three studies have explicitly tested the effects of positive psychology interventions for individuals with eating disorders. First, Harrison and colleagues (2015) examined the effects of a five-session “Positivity Group” on subjective happiness and life satisfaction among eight adolescents (aged 11-18) in an inpatient setting. This group was comprised of five different positive psychology interventions: (1) looking out for three good things in one’s life each day; (2) writing gratitude letters; (3) random acts of kindness; (4) looking at pictures of one’s favourite person and directing loving-kindness towards them; and (5) identifying one’s strengths. While no statistical analyses were conducted, descriptive data revealed that eating disorder patients reported “meaningful” changes in their level of happiness and life satisfaction post-intervention. Second, Enrique and colleagues (2018) tested whether a four-week “Best Possible Self” exercise, a positive psychology intervention which prompts participants to imagine the ideal future in which they reach all their goals, could enhance positive affect and optimistic thinking in people with eating disorders. After a single session, individuals who received the positive psychology intervention reported more optimistic thinking than those in a control group; however, there were no significant differences in participants’ positive affect at this time point. At the end of the one-month training period, there were no significant differences in either

outcome measure between the two conditions. Finally, Enrique and colleagues (2020) tested whether this same four-week intervention could enhance positive emotions and optimistic thinking among seven inpatient women (aged 13-38) with eating disorders. Once again, the intervention failed to yield significant changes in positive affect or optimistic thinking. Taken together, findings suggest that positive psychology interventions may elicit subjective changes in positive mental health among individuals with eating disorders; however, data from follow-up assessments suggest there are few sustained benefits gained from these interventions.

The need to promote positive mental health among individuals with eating disorders, coupled with the scarcity of research examining how to do so, highlights an avenue for necessary inquiry. Currently, researchers have attempted to explicitly promote positive mental health via exercises and interventions aimed at augmenting positive mood states; however, findings from these initiatives fail to generate compelling outcomes. One possible explanation for these null findings is that these approaches rely on inducing positive mood states without also addressing the high degree of emotional suffering that people with eating disorders experience. While directing attention away from one's suffering may elicit temporary improvements in one's mood, these improvements are likely to be short-lived (Lazarus & Folkman, 1984) and may fail to validate one's distress and suffering (Shenk & Fruzzetti, 2011). A failure to acknowledge and validate one's emotions by deliberately suppressing or avoiding them, such as by attempting to shift one's attention to positive stimuli, may perpetuate feelings of distress over time (e.g., Dryman & Heimberg, 2018; Hayes et al., 1996; Panayiotou et al., 2014). Additionally, avoiding negative emotions may reinforce maladaptive beliefs about emotional suffering that individuals with eating disorders are already known to experience, such as the belief painful emotions are inherently bad and something to be avoided (Corstorphine, 2006; Gilsenti et al., 2023; Trincas et

al., 2016; Vuillier et al., 2021). These may be some of the reasons why the above-reviewed positive psychology interventions fail to yield sustained changes in outcomes related to positive mental health (Enrique et al., 2018; Enrique et al., 2020).

Another possible explanation stems from the fact that positive psychology interventions may fail to fundamentally alter the negative and critical ways individuals with eating disorders relate to themselves. Indeed, individuals with eating disorders have a known tendency to direct critical and punitive responses toward themselves in response to perceived inadequacies, failures, or other threats to the self (Duarte et al., 2016; Goss & Allan, 2009). Accordingly, self-criticism can be conceptualized as a maladaptive defense strategy that is activated by feelings of shame and aims to improve or correct personal attributes (e.g., one's body weight) to protect the self (Gilbert & Irons, 2005; Gilbert & Procter, 2006); however, these harsh self-attacks can act to maintain and perpetuate feelings of shame. Aside from contributing to eating disorder pathology (Goss & Allan, 2009) this negative way of self-to-self relating is linked to depressive symptoms (Luyten et al., 2007), as well as compromised social interactions (Zuroff et al., 1995) and psychosocial functioning (Dunkley et al., 2009). A potentially more effective and long-lasting way to promote positive mental health among individuals with eating disorders is by equipping them with a way of relating to their suffering that is more caring, validating, and less critical, and thereby more conducive to sustained well-being: self-compassion.

An Introduction to Self-Compassion

Conceptualizations of Self-Compassion

Gilbert's Conceptualization. Gilbert (1989, 2005, 2014) provides a rich theoretical framework for the origins of self-compassion that is grounded in Tibetan Buddhist psychology and evolutionary psychology, and draws on the nature of social motivational systems. According

to Gilbert (2000, 2005), our capacity for self-compassion is rooted in an evolved capacity and motivation to provide care for others and seek care for ourselves. For instance, caregivers have the capacity to detect and appropriately respond to signs of distress in their young (e.g., a parent comforting a child when they are crying; Gilbert, 2005). Conversely, mammals have evolved to seek and respond to signals of care from others; for instance, infants make distress calls to alert their caregivers of their unmet needs and are responsive to signals of caregiving from them (e.g., an infant being soothed by a caregiver's touch; Gilbert, 2005). While these evolved capacities to seek and provide care are social in nature, Gilbert proposed that our ability to be self-aware enables us to direct these care-oriented capacities inward (Gilbert, 2005). That is, humans can notice when they themselves are distressed, as well as respond to their own distress with care and warmth, just like an external caregiver might. As such, Gilbert defines self-compassion as a motivational process, in which individuals are motivated to attend to and engage with their own suffering, as well as motivated to commit to actions that will alleviate and prevent their distress in ways that are conducive to their overall well-being (Gilbert, 2005).

Gilbert (2005, 2009, 2015) theorizes that beyond fostering feelings of inner soothing and safeness, treating oneself with compassion plays a critical role in adaptive emotion regulation. Specifically, Gilbert (2005, 2015) proposed that humans have evolved three broad emotion regulatory systems: the threat system, drive system, and soothing system. The threat system evolved to quickly detect threats, and when active, gives rise to negative emotional states, such as sadness, shame, anxiety, and anger (Gilbert, 2010). This system is physiologically linked with the release of stress hormones via the hypothalamic-pituitary-adrenal (HPA) axis and the activation of the sympathetic nervous system (Hasper, 2023). These physiological responses serve to prepare the body to fight, flight, or freeze when faced with threatening experiences

(Gilbert, 2014). The drive system evolved to motivate individuals to engage in goal-directed behaviours that are perceived as rewarding, and when activated, is associated with activating positive affective states, such as happiness or excitement (Gilbert, 2010). This system is highly influenced by the reward centre of the brain that releases dopamine (Gilbert, 2014). However, the overactivation of the drive system can contribute to addictive, compulsive, or perfectionistic behaviours in order to move individuals toward their goals (Goss & Allan, 2009; Seiler et al., 2022). The chronic overactivation of the threat and drive system are often observed in clinical populations, such as individuals with depression, anxiety, and eating disorders (Kontis & Theochari, 2012).

Finally, the soothing system is activated in response to signals of care and compassion—from oneself or others—and facilitates feelings of safeness and contentment, also referred to as relaxed positive affective states (Gilbert, 2010). The soothing system is linked to the increased release of hormones associated with pleasure and social affiliation, such as endorphins and oxytocin (Gilbert, 2014). Additionally, this system is associated with the activation of the parasympathetic nervous system via the vagus nerve, as evidenced by increased heart rate variability and salivary alpha-amylase secretion (Arch et al., 2014; Porges, 2007). Importantly, Gilbert (2009, 2010, 2015) proposes that treating oneself with compassion can serve to balance these three affect regulatory systems in a manner that is conducive to one's overall well-being, such as 'toning down' the threat system in individuals experiencing elevated levels of anxiety or the drive system in individuals who are highly perfectionistic.

Neff's Conceptualization. Neff (2003a) has proposed a conceptually distinct, yet related, definition of self-compassion to Gilbert's (2005) that draws on Buddhist psychology. Neff (2003a) purports that self-compassion is a positive self-attitude that involves treating oneself in a

similar manner that one would treat a friend who was going through a difficult time. Similar to Gilbert (2005), Neff (2023a) states that self-compassion entails a tender, nurturing response to one's distressing emotions. Specifically, according to Neff (2003a), self-compassion is comprised of three distinct, yet interrelated, facets: mindfulness, self-kindness, and common humanity. Mindfulness involves taking a non-judgmental and observer-like stance towards one's distressing emotions or perceived inadequacies, rather than overidentifying or fusing with them in a way that exacerbates suffering. Self-kindness involves directing feelings of care and support towards one's thoughts, emotions, and behaviours, as opposed to directing hostility or harsh criticisms towards the self. Finally, common humanity involves recognizing that suffering and imperfections are inherent to the human condition; this recognition fosters a sense of connectedness to others amidst one's suffering, rather than feelings of shame or isolation. Together, these three facets are thought to work in tandem to alleviate suffering and promote well-being (Neff, 2003a).

Measures of Self-Compassion

The first and most widely used measure of self-compassion is the Self-Compassion Scale, developed by Neff (2003b). Mapping onto Neff's conceptualization of self-compassion, the Self-Compassion Scale is comprised of 26 items assessing the positive (i.e., mindfulness, self-kindness, common humanity) and negative (i.e., overidentification, self-judgment, isolation) components of self-compassion. Accordingly, the Self-Compassion Scale prompts individuals to reflect on the extent to which they behave in a compassionate (e.g., "When I'm going through a very hard time, I give myself the caring and tenderness I need") or uncompassionate ("When times are really difficult, I tend to be tough on myself") manner toward themselves during difficult times. In her original development and validation of the Self-Compassion Scale, Neff

proposes and found support for two factor structures: a six-factor structure, with each factor representing one of the six positive or negative facets of self-compassion, and a single factor structure, representing a global measure of self-compassion (Neff, 2003b). At present, the Self-Compassion Scale is the most commonly used measure of self-compassion to date and has been adapted to reduce the number of items (Raes et al., 2011), assess state-levels of self-compassion (Neff, Tóth-Király, et al., 2021), as well as assess self-compassion in individuals of different ages (e.g., Neff, Bluth, et al., 2021) and who speak different languages (e.g., Kotsou & Leys, 2016; Veneziani et al., 2017).

Despite the fact that the Self-Compassion Scale is used in the vast majority of research on self-compassion, critics of the measure have questioned the scale's psychometric properties and theoretical consistency (e.g., Brenner et al., 2017; Muris et al. 2016; Muris et al., 2018). For instance, critics have questioned the generalizability of the scale's factor structure. Specifically, while research across contexts, languages, and populations largely replicates the six-factor structure, findings are inconsistent when it comes to a single higher order factor (i.e., a total self-compassion score), suggesting that perhaps computing a total self-compassion score might not fit the data in some language translations of the measure (Brenner et al., 2017; Castilho et al., 2015). Further, some researchers have argued that using the reverse-scored items that measure uncompassionate tendencies (i.e., overidentification, self-judgment, isolation) when computing an overall measure of self-compassion might inflate the negative associations observed between self-compassion and psychopathology, and fails to map onto other conceptualizations of self-compassion in the field (i.e., that self-compassion is not merely the inverse of self-criticism; Montero-Marín et al., 2016). Accordingly, these latter researchers argue on a behalf of a two-factor model of self-compassion, proposing that the measure is best used by creating one

‘positive’ factor, representing self-compassion, and one ‘negative’ factor, representing self-criticism (Brenner et al., 2017). Nonetheless, there have been ongoing efforts by Neff and other compassion-based researchers to aptly respond to these criticisms, with these researchers continuing to provide ample support for the validity of the Self-Compassion Scale, including as a single-factor structure (e.g., Neff, 2016; Neff, Long, et al., 2018; Neff, Tóth-Király, et al., 2019).

Gilbert and colleagues (2017) developed the Compassionate Engagement and Action Scales, a novel measure of self-compassion that maps onto Gilbert’s (2005) conceptualization of self-compassion. The Compassion for Self subscale assesses Gilbert’s (2005) two theoretical components of self-compassion: (1) one’s motivation to notice and engage with one’s own distress, and (2) the ability to cope in ways that are helpful, rather than harmful, to one’s well-being (Gilbert et al., 2017). Preliminary findings suggest a moderate correlation between Gilbert and colleagues’ (2017) and Neff’s (2003b) measures of self-compassion ($r = 0.60$). While the Compassionate Engagement and Action Scales offer a promising approach to measure self-compassion, additional research into the psychometric properties and utility of the scale is needed.

More recently, alternative approaches to measuring self-compassion have emerged within the literature. For instance, recent researchers have created a single face-valid item of self-compassion (i.e., “I have high self-compassion”) to measure self-compassion rapidly in time-limited research (e.g., experience sampling studies; Zhang et al., 2022). Other researchers have sought to measure self-compassion by coding open-ended qualitative responses to vignettes depicting challenging events (Redden et al., 2021). Nonetheless, these alternative approaches to measuring self-compassion are still in their infancy and have garnered limited empirical support to date. At present, the Self-Compassion Scale continues to be the leading measure used in the

field of self-compassion research (Muris & Otgaar, 2020; Neff, 2023), and thus, the current literature review largely refers to research utilizing the Self-Compassion Scale, or variations of it.

Measures of Self-Compassion: From Between-Persons to Within-Person

To date, researchers have largely conceptualized self-compassion as a stable trait variable (Neff, 2003a), using Neff's (2003b) Self-Compassion Scale to examine how individuals *typically* act towards themselves during difficult times. As a result, research on self-compassion often utilizes cross-sectional designs to examine the associations between self-compassion and other variables of interest at the between-persons level. Results from these between-persons studies often suggest that individuals who are *generally* more self-compassionate *than others* experience greater well-being and fewer psychopathological symptoms, for example. Problematically, conceptualizing self-compassion solely as a trait variable fails to account for the findings that the extent to which an individual treats themselves with compassion may change according to time (Kelly & Tasca, 2016), context (Watermann, 2020), and with intervention (Ferrari et al., 2019). Further, these trait-based operationalizations and forms of measurement contradict alternative perspectives on self-compassion, which suggest that self-compassion is a skill that is amenable to change via intervention and practice (Gilbert, 2000; Salzberg, 2009).

While relatively novel to the field of self-compassion, personality researchers have long contended that personality variables that were once conceptualized to be stable, trait-like qualities of a person, such as extraversion or emotional stability, tend to fluctuate substantially within a given person, from one time point to another (Fleeson, 2001; Fleeson, 2004). Accordingly, focusing on individuals' average tendencies may fail to capture meaningful differences in functioning that occur at the within-person level (Funder, 2008). In recent years,

research on self-compassion has started to more intentionally examine the ways in which self-compassion naturally fluctuates within a given person, such as from one day to the next, as well as whether these fluctuations are associated with changes in cognitive, emotional, and/or behavioural outcomes (e.g., Breines et al., 2014; Ewert et al., 2022; Kelly & Stephen, 2016). Daily diary studies conducted in diverse non-clinical samples suggest that approximately 23% to 50% of the variability in self-compassion scores occurs at the within-person level, and approximately 50% to 77% of the variability in self-compassion scores occurs between-persons (Breines et al., 2014; Dupasqueir et al., 2020; Ewert et al., 2022; Gavrilova & Zawadski, 2023; Kelly & Stephen, 2016; Li et al., 2020; Mey et al., 2023). These findings highlight that a moderate degree of variability in self-compassion scores is accounted for by day-to-day, within-person fluctuations, which in turn, appear to meaningfully influence outcome variables, such as body image (Kelly & Stephen, 2016), alcohol use (Biehler et al., 2024), as well as affective well-being and stress reactivity in daily life (Mey et al., 2023).

Daily diary studies have also been used to explore the extent to which self-compassion fluctuates within individuals with eating disorders. Interestingly, despite their lower baseline levels of self-compassion than non-clinical groups (Ferreira et al., 2013; Kelly et al., 2014), individuals with eating disorders exhibit significant variability in the extent to which they treat themselves with compassion from one day to the next. Indeed, findings from two-week daily diary studies demonstrate that approximately 43% and 44% of the variability in self-compassion scores occurred at the within-person level in individuals with anorexia nervosa (Kelly et al., 2020) and bulimia nervosa (Katan & Kelly, 2021), respectively. Importantly, these within-person fluctuations in self-compassion levels have been linked to cognitive and behavioural eating disorder symptoms (Katan & Kelly, 2021; Kelly et al., 2020), highlighting the necessity of

considering both within- and between-person levels of self-compassion in relation to clinical outcomes in future research on people with eating disorders.

Although there is now consensus that self-compassion scores vary within a given person, little is known about contextual factors that give rise to higher state or daily levels of self-compassion. Research on self-criticism has found that momentary self-criticism is impacted by a number of situational factors, including one's affective state, ability to tolerate distress, willpower, the extent to which they perceive criticism from others, as well as their physiological states (e.g., being tired and hungry; Veilleux et al., 2024). Given the negative associations between self-compassion and self-criticism (Neff, 2003b), it is plausible that similar contextual factors might influence one's ability to treat themselves compassionately in a given moment or on a given day. Further, there is some preliminary evidence that being exposed to other people treating themselves self-compassionately may influence one's own state self-compassion levels in a 'contagious' manner (Miller & Kelly, 2020). However, future research is needed to elucidate external factors that might influence self-compassion in daily life, such as exposure to life stressors.

Self-Compassion Promotes Positive Mental Health

Converging evidence from non-clinical samples suggests that self-compassion plays a critical role in promoting positive mental health and well-being (e.g., Neff et al., 2007). Cross-sectional findings from North American community and college samples reveal that self-compassion is positively associated with several outcomes related to well-being, including positive affect, life satisfaction, emotional intelligence, and self-esteem (e.g., Neff et al., 2018; Zessin et al., 2015). Self-compassion has also been linked to markers of social well-being; for instance, self-compassion has been positively linked to feelings of social connectedness, a

tendency to initiate interpersonal interactions and engage in self-disclosure, and reduced feelings of loneliness (Akin, 2010; Bloch, 2018).

Psychophysiological research suggests that treating oneself with compassion stimulates a cascade of neurobiological responses that promote positive affect, feelings of safeness, reduced anxiety, and social affiliation (Engen & Singer, 2015; Gilbert, 2009; Kirschner et al., 2019), similar to that observed in instances of received compassion from others. For instance, receiving compassion – either from oneself or another person—activates the parasympathetic nervous system, stimulating the release of oxytocin, reducing cortisol levels (i.e., the stress hormone), and activating the left prefrontal cortex (i.e., a brain region associated with positive emotions, such as joy and excitement), and increasing heart rate variability (Gilbert et al., 2009; Gilbert, 2014; Kirby et al., 2017; Rockliff et al., 2008; Wang et al., 2019). These findings suggest that individuals may experience similar physiological benefits from treating themselves with compassion, even in the absence of external forms of support. Importantly, the series of physiological reactions that occur in response to self-compassion is linked to markers of social well-being, including interpersonal approach behaviour and feelings of social safeness, with social safeness referring to a sense of comfort, warmth, and connectedness in one's interpersonal relationship (Depue & Morrongiello, 2005; Gilbert, 2009).

In addition to promoting emotional and social well-being, a mounting body of literature has revealed a positive association between self-compassion and adaptive coping behaviours, the latter of which is a key component of mental health (WHO, 2022). For instance, findings from a recent meta-analysis of 136 samples revealed that self-compassion was positively associated with adaptive coping behaviours ($r = .306$), such as engaging in problem-solving efforts (e.g., planning) or seeking support from others (Ewert et al., 2021). While comparatively limited, a

handful of studies also suggests that trait self-compassion levels may affect the ways in which individuals cope with adversity on a given day. For instance, college women who were higher in trait self-compassion reported receiving greater levels of social support on days of increased distress over an eight-day daily diary (Dupasquier et al., 2020). Similarly, higher trait levels of self-reassurance, a construct that is closely related to self-compassion, have been linked to higher daily and average levels of received social support among college students (Hermanto et al., 2017).

Self-Compassion is Associated with Reduced Eating Disorder Symptomology

Within the literature on eating pathology, research on self-compassion has been overwhelmingly focused on its associations with eating disorder-related outcomes. Broadly, findings within this literature base consistently demonstrate that self-compassion serves a protective function against eating disorder symptomology (e.g., de Carvalho Barreto et al., 2018; Kelly & Tasca, 2016), while also promoting adaptive eating behaviours and positive attitudes toward one's body (e.g., Homan & Tylka, 2015; Schmidt et al., 2019). However, it is important to note that research conducted in clinical, eating disorder samples, is seemingly limited when compared to the large body of extant literature in non-clinical samples.

Cross-sectional research has consistently demonstrated that individuals with eating disorders report significantly lower levels of trait self-compassion than the general public (Ferreira et al., 2013; Kelly et al., 2014). This is likely linked, at least in part, to the high levels of self-criticism experienced by individuals with eating disorders (Paranjothy & Wade, 2024), which has been found to reduce self-compassion over time (Tobin & Dunkley, 2021). Problematically, individuals with eating disorders who might benefit most from treating themselves with compassion report greater barriers to doing so than their non-clinical

counterparts (Kelly et al., 2014). For instance, individuals with eating disorders often endorse being fearful of the perceived negative consequences associated with self-compassion, such as worrying that they will become a weak person or that their personal standards will drop (Geller et al., 2019; Geller et al., 2020; Kelly et al., 2021). These barriers have been found to interfere with individuals with eating disorders' willingness to engage with and subsequently benefit from interventions designed to increase self-compassion (Geller et al., 2020; Kelly et al., 2013).

Despite the differences in dispositional levels of self-compassion, findings regarding the potential benefits of trait self-compassion on eating disorder related outcomes are surprisingly similar for clinical and non-clinical populations. For example, research conducted in both eating disorder and non-eating disorder samples suggest that individuals who report higher levels of trait self-compassion report less eating pathology (de Carvalho Barreto et al., 2018; Ferreira et al., 2014; Kelly & Tasca, 2016; Pullmer et al., 2019; Taylor et al., 2015) and engage in fewer maladaptive eating behaviours (e.g., binge eating, restrictive dieting; Katan & Kelly, 2021; Taylor et al., 2015), as well as report less body image concerns (Cadena et al., 2024; Lonergan et al., 2019; Modica, 2019; Webb et al., 2016; Wollast et al., 2020). Further, cross-sectional findings from longitudinal research spanning three to eight months in duration have demonstrated that higher self-compassion scores at a preceding timepoint predicted less eating pathology at a subsequent time point in clinical (Kelly & Tasca, 2016) and non-clinical (Fresnics et al., 2019; Linardon & Messer, 2023; Turk et al., 2021) populations.

Naturally occurring fluctuations in self-compassion have also been linked to reduced eating disorder symptomology in clinical and non-clinical samples (e.g., Breines et al., 2013; Katan & Kelly, 2021; Kelly & Stephen, 2016; Thøgersen-Ntoumani et al., 2017). A daily diary study conducted with undergraduate women found that on days when they treated themselves

with more compassion than usual, they reported a greater ability to eat in accordance with their body's hunger and satiety cues (i.e., intuitive eating), as well as reported greater body appreciation and satisfaction (Kelly & Stephen, 2016). Breines and colleagues (2014) found that on days that college women were more self-compassionate about their appearance than usual, they reported lower levels of disordered eating. Thøgersen-Ntoumani and colleagues (2017) later found that in situations where young women from the general population reported higher levels of appearance-related self-compassion, they experienced less anxiety about others' perceptions of their bodies, were less driven by the desire to be thin, and felt more satisfied with their bodies. Preliminary evidence from research conducted in college samples suggests that higher than usual levels of self-compassion on a particular day can promote adaptive responding in the face of body-image related stressors (e.g., interactions with body-focused others), such as eating more intuitively and showing a greater appreciation for one's body (Miller et al., 2019).

Although individuals with eating disorders report lower levels of trait self-compassion relative to non-clinical groups, evidence from daily diary studies indicates that they experience significant day-to-day variability in self-compassion levels, and that this variability is meaningfully related to eating disorder symptoms. As previously mentioned, daily diary studies conducted in individuals with anorexia nervosa (Kelly et al., 2020) and bulimia nervosa (Katan & Kelly, 2021) suggest that approximately half of the variability in self-compassion scores occur at the within-person, or daily, level. Using a two-week daily diary design, Kelly and colleagues (2020) demonstrated that on days that women with anorexia nervosa ($N = 33$) reported higher levels of self-compassion than is typical for them, they also reported lower levels of eating pathology. However, at the between-persons level, higher average levels of self-compassion during the two weeks were not related to eating pathology, suggesting that within-person

fluctuations in self-compassion might be more relevant to eating pathology among individuals with anorexia nervosa than trait levels (Kelly et al., 2020). Katan and Kelly (2021) subsequently demonstrated that on days that individuals with bulimia nervosa ($N = 124$) reported treating themselves more compassionately than usual, they reported lower levels of dietary restraint, clinical impairment associated with their eating disorder symptoms, and were less likely to engage in binge eating and inappropriate compensatory behaviours.

Finally, findings across both eating disorder and non-eating disorder samples suggest that self-compassion levels are amenable to change via compassion-based interventions (e.g., self-compassion letter-writing; Compassion-Focused Therapy; Gale et al., 2014; Kelly & Waring, 2018), and that these interventions can effectively reduce eating disorder-related symptoms (e.g., Gale et al., 2014; Kelly & Carter, 2015; Rahimi-Ardabili et al., 2017; Steindl et al., 2017; Turk & Waller, 2020). For instance, brief self-compassion interventions, ranging in length from a single session (Gracias & Stutts, 2024; Grey et al., 2022; Moffitt et al., 2018) to three-weeks (e.g., Albertson et al., 2015), have been found to significantly reduce body image and appearance concerns, weight dissatisfaction, body shame, and fat phobia (i.e., negative beliefs about people of higher weight; Gracias & Stutts, 2024), while enhancing body appreciation; these intervention-related improvements were maintained at three-weeks (Grey et al., 2022) and three-months follow-up (Albertson et al., 2015). Furthermore, Adams and Leary (2007) demonstrated that highly restrictive eaters who were primed to respond to diet violations with self-compassion, compared to those in a control condition, were less likely to engage in binge eating as a way of coping with the guilt associated with the dietary lapse.

A number of studies have also demonstrated that increasing self-compassion levels through Compassion Focused Therapy (Gilbert, 2009, Gilbert, 2014) can reduce eating disorder

symptoms among individuals with eating disorders (Gale et al., 2012; Kelly et al., 2016; Millard et al., 2023). Based on Gilbert's (2005) conceptualization of compassion, Compassion Focused Therapy integrates techniques from cognitive-behavioural therapy and mindfulness-based approaches to address feelings of shame and self-criticism by encouraging individuals to increase their capacity for compassion (Gilbert, 2014; Gilbert & Procter, 2006). Gale and colleagues (2012) were the first to demonstrate that Compassion Focused Therapy (CFT) could alleviate eating disorder symptoms in a clinical eating disorders sample. Specifically, the authors found that incorporating a 16-week CFT program into a standard outpatient CBT-based eating disorders program significantly reduced eating disorder symptoms in a transdiagnostic sample. Consistent with these findings, Kelly et al. (2016) demonstrated that a 12-week CFT group, provided as an adjunct to standard evidenced-based treatment for eating disorders, yielded greater improvements in self-compassion, fears of self-compassion, and eating pathology compared to treatment as usual.

Using a randomized control trial, Kelly and Carter (2014) compared the efficacy of a three-week Compassion Focused Therapy self-help intervention to a behavioural strategies intervention and a waitlist control condition in a sample of individuals with binge eating disorders. The authors found that both active intervention conditions reduced the frequency of binge eating episodes compared to the control condition. However, the compassion-focused intervention was more effective than both the behavioural strategies intervention and control condition at reducing eating, weight and shape concerns, and at increasing self-compassion. Although both self-compassion and behavioral strategies emerged as effective ways to address the behavioral symptoms of binge-eating disorder, cultivating self-compassion appeared to uniquely reduce the cognitive and emotional symptoms of the disorder (Kelly & Carter, 2014).

Since these seminal papers, there have been efforts to continue to identify novel and potentially more accessible ways of cultivating self-compassion in individuals with eating disorders, such as via self-compassion letter writing tasks (Kelly & Waring, 2018) or through low-intensity interventions that integrate elements of compassion-based practices (Duarte et al., 2017).

It is evident that self-compassion is a key predictor of eating pathology. Individuals with and without eating disorders who are generally more self-compassionate than others or who treat themselves more compassionately on a given day or in a given moment report significant reductions in behavioural and psychological eating disorder symptoms. Further, interventions designed to directly target self-compassion are effective at increasing average levels of self-compassion, reducing fears of self-compassion, and reducing eating disorder symptoms in both clinical and non-clinical groups. However, research has yet to explore whether self-compassion might not only reduce eating disorder pathology, as has been demonstrated, but additionally promote indicators of positive mental health in individuals with eating disorders

An Argument for Self-Compassion as a way to Promote Positive Mental Health in Eating Disorder Populations

Returning to the importance of fostering positive mental health in people with eating disorders, and the lack of evidence regarding ways to do so, I propose that the development of self-compassion may be a promising avenue. At present, positive psychology interventions aimed at directly addressing positive mental health in individuals with eating disorders—by encouraging positive thoughts, feelings, and behaviours—appear to have limited efficacy in producing meaningful and sustained improvements in markers of positive mental health in this population (Enrique et al., 2020). As previously suggested, one potential explanation for this is that positive psychology interventions, which focus on replacing ‘negative’ internal experiences

with positive ones, may fail to acknowledge and address the high degree of suffering that individuals with eating disorders experience. While redirecting one's attention to positive or pleasurable experiences might momentarily augment positive mood states, the emphasis on thinking, acting, or feeling more positively may inadvertently reinforce individuals' tendency toward experiential avoidance, thereby perpetuating feelings of distress over time (Dryman & Heimberg, 2018; Hayes et al., 1996). Furthermore, negative emotions often serve as signals that important emotional needs, such as the need for connection, validation, or safety, are not being met (Greenberg, 2002; Greenberg, 2021; Greenberg, 2022; Timulak, 2015, p. 11). By diverting attention away from these emotions, individuals might miss the opportunity to identify and effectively address these unmet needs, both of which are critical in fostering positive mental health and well-being (Greenberg, 2021; Shahar, 2020; Timulak, 2015).

There is theoretical and empirical reason to believe that self-compassion might promote markers of positive mental health in individuals with eating disorders in ways that these positive psychology interventions do not. Treating oneself with compassion involves a desire to engage with, rather than avoid, one's suffering, coupled with a motivation to act in helpful ways to alleviate it (Gilbert, 2005; Neff, 2003a). Self-compassion is theoretically proposed to promote a calm and soothed affective state through the activation of the soothing system, a proposition that has been empirically supported in non-clinical groups (Kirby et al, 2017; Rockliff et al., 2008). Thus, it is probable that helping individuals with eating disorders soothe themselves and reduce distress in times of need via self-compassion will enhance their capacity to experience positive mood states. However, self-compassion may also bolster other markers of positive mental health that are lacking within eating disorder samples. For instance, self-compassion could prompt the use of adaptive coping behaviours in response to adversity by motivating individuals to engage

with and approach their distress in adaptive ways, such as by seeking emotional support from a trusted other, rather than rely on unhelpful behaviours, such as eating disorder symptoms, to evade it (Haynos & Fruzzetti, 2011; Heatherton & Baumeister, 1991). Thus, the benefits of self-compassion could be twofold: it could increase positive mental health while also reducing the symptoms of mental illness (i.e., eating pathology). Identifying a transdiagnostic skill, such as self-compassion, that could accomplish both goals could act to innovatively streamline and enhance the efficacy of eating disorder treatments.

To illustrate how self-compassion might promote positive mental health in the daily lives of individuals with eating disorders, one might imagine an individual, Alex, who has been experiencing longstanding difficulties with restrictive eating, excessive exercise, and body dissatisfaction. Although Alex experiences daily stressors related to their eating and body image, on this particular day, they received unexpected criticism from their supervisor about a mistake they made at work. Being a high achiever and perfectionist, this feedback leaves Alex overwhelmed with feelings of incompetency, shame, and feeling as though they are a failure. Gilbert (2005, 2009) and Neff (2003a) propose that in this difficult situation, adopting a self-compassionate orientation might involve Alex pausing to mindfully acknowledge and allow the emotions they are experiencing, while also making a deliberate effort to offer kindness, understanding, and warmth. For instance, Alex's internal dialogue may sound like, "Right now, I am feeling really upset, embarrassed and like a failure. This really hurts. It makes sense that I am feeling this way given that I really care about my job and always try my best, but making a mistake does not mean that I am a failure, it means that I am human." This act of extending gentleness, kindness, and care toward themselves would theoretically activate their parasympathetic nervous system and soothe their feelings of threat, as well as reduce any urges

they may have to immediately “fix” the situation. According to Gilbert (2005), by compassionately engaging with their distress, Alex would experience a motivation to respond to it in a caring way and implement behaviours that they believe would be helpful, such as taking a few deep breaths or reaching out to a supportive friend, rather than engaging in harmful behaviours, such as overexercising or undereating. Thus, the act of practicing self-compassion in a moment of distress is likely to both enhance Alex’s momentary experiences of positive affect and/or social connectedness, and over time, might elicit lasting changes in their overall mental health and well-being.

Summary

Individuals with eating disorders report marked impairments in domains beyond their eating behaviours: they experience low levels of positive affect, poor interpersonal relationships, and tend to rely on avoidant and potentially dangerous coping behaviours when faced with distress (Ball & Lee, 2000; Connan et al., 2007; Kitsantas et al., 2003). In other words, they not only experience high levels of mental illness, but also poor (positive) mental health. Indicators of positive mental health are closely related to increased life satisfaction (Busseri, 2018), motivation for eating disorders treatment (Pauli et al., 2017), and better eating disorder treatment outcomes (Davies et al., 2011), and thus, it is imperative that researchers and clinicians identify ways to promote it. Indeed, this call to action is in step with the growing need to assess and study mental health more holistically, not merely focusing on reducing symptomology, but also promoting positive psychological functioning (Keyes, 2005; WHO, 2022). Self-compassion might represent one promising way to promote positive mental health among individuals with eating disorders. To date, the links between intra- and interindividual differences in self-compassion and eating pathology have been well-established. However, research in the eating

disorders has yet to explore whether these between-person and within-person fluctuations in self-compassion can also contribute to indicators of positive mental health. Thus, pursuing this avenue of research will further our theoretical understanding of the benefits self-compassion can offer to individuals with eating disorders.

In addition to the possible theoretical implications, addressing these gaps in the literature can have significant implications for the treatment of eating disorders. For instance, discovering such an association would strengthen the rationale to integrate self-compassion training into current eating disorder interventions and/or offer standalone self-compassion training to the many people with eating disorders who are not motivated to work directly on changing their eating disorder behaviours. Further, evidence that daily fluctuations in self-compassion contribute to positive mental health may suggest that, by cultivating a self-compassionate perspective on a given day, individuals with eating disorders may be able to enjoy greater emotional, psychological, and social well-being. These day-to-day improvements in positive psychological functioning may act to motivate individuals with eating disorders to practice self-compassion more intentionally, depending on the immediacy of the observed effects following practice.

Aims of the Current Program of Research

The overarching goal of this dissertation is to investigate the potential links between self-compassion and markers of positive mental health in individuals with eating disorders. In three longitudinal studies, conducted in different contexts (i.e., daily life and intensive eating disorder treatment) and with diverse eating disorder populations (i.e., anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified), this dissertation sought to investigate the within-person, between-persons, and temporal relations between self-compassion and indicators of

positive mental health, namely, positive affect, social safeness (i.e., the warm and soothing affective state that stems from feeling cared for and connected to others; Gilbert, 2008), and adaptive coping behaviours. Of particular interest was determining whether the associations between self-compassion and markers of positive mental health emerged irrespective of participants' eating pathology, both on a given day, during a given period of time, and on average.

Study 1 utilized a two-week daily diary study to examine the unique contributions of trait (i.e., between-persons) and daily (i.e., within-person) self-compassion to positive affect and social safeness in a community sample of women with anorexia nervosa (AN) and atypical anorexia nervosa who were not receiving eating disorder treatment. To examine whether increased self-compassion precedes positive emotional states, this study additionally tested whether increases in self-compassion from the preceding day influenced individuals' positive affect and social safeness. **Study 2** employed a two-week daily diary study to examine the contribution of trait, daily, and day-to-day changes in self-compassion to the use of adaptive coping behaviours (i.e., problem-solving, emotional social support, and instrumental social support) in a community sample of women with bulimia nervosa. **Study 3** utilized a 12-week longitudinal study design, in which individuals with various eating disorders who were attending an intensive eating disorders treatment program (i.e., inpatient or day hospital) completed questionnaires on five separate occasions over the course of treatment. This study investigated the contribution of between-persons self-compassion levels and within-person changes in self-compassion to social safeness during eating disorder treatment, as well as the potential within-person reciprocal associations between social safeness and self-compassion. Together, findings from this doctoral dissertation would be the first to link self-compassion to indicators of positive

mental health in individuals with eating disorders. Further, the present findings might have powerful theoretical and practical implications for the ways in which researchers and clinicians can adapt existing interventions or create novel interventions to promote positive mental health within eating disorder populations.

Study 1: Self-compassion promotes positive mental health in women with anorexia nervosa: A two-week daily diary study

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Introduction

Background

Self-compassion entails attending to one's own suffering with tenderness, nonjudgment, and understanding, together with a desire to prevent and alleviate it (Gilbert, 2005; Neff, 2003). Research suggests that self-compassion levels can vary both between people, with some individuals reporting higher trait levels of self-compassion than others (Neff, 2003), as well as within a person, with self-compassion levels fluctuating higher on some days than others (Kelly & Stephen, 2016). Both higher daily (Katan & Kelly, 2021; Kelly et al., 2020) and trait (Turk & Waller, 2020) self-compassion levels have been linked to reduced eating pathology in individuals with eating disorders, and interventions designed to enhance self-compassion levels have been found to effectively reduce eating disorder symptoms (Turk & Waller, 2020). While these findings highlight the beneficial role that the development of self-compassion can play in reducing symptoms of mental illness in people with eating disorders, it would also be valuable to know whether self-compassion may play a role in promoting positive mental health in this population.

The World Health Organization (WHO) purports that mental health is more than the absence of illness and defines it as “a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community” (WHO, 2022, para. 1). Accordingly, research suggests that mental health is best conceptualized on a dual continuum that includes two distinct, yet negatively correlated, dimensions: mental illness and (positive) mental health (Keyes, 2005). Consistent with this dual continuum model is the finding that individuals, including those with eating disorders, can still flourish and have high levels of well-being when experiencing symptoms of mental illness (de Vos et al., 2018).

The limited positive emotional and social experiences reported by people with eating disorders highlights the importance of attending to and bolstering mental health in this population. For instance, individuals with eating disorders experience blunted positive affect, both in general (Kitsantas et al., 2003) and in response to pleasant events (Cardi et al., 2012). Further, these individuals report fewer positive experiences in their interpersonal relationships, such as a lack of perceived security and belonging (Nunez, 2019; Tasca & Balfour, 2014). A perceived sense of warmth, belonging, and connectedness in one’s relationships, which Gilbert (2009) refers to as social safeness, has been found to be particularly elusive for individuals with eating disorders; instead, individuals with eating disorders tend to feel inferior to others and to fear negative evaluations from others (Pinto-Gouveia et al., 2014). Together, these fears leave individuals with eating disorders feeling unsafe or threatened in their social world and motivate these individuals to isolate themselves from others (Gilbert, 2000, 2007). Given the reduced emotional and social quality of life that individuals with eating disorders experience (Jenkins et al., 2011), there is a call in the field to identify ways of enhancing positive psychosocial

functioning in this population (de Vos et al., 2018; Mitchison et al., 2016). This movement toward discovering ways to bolster positive mental health in individuals with eating disorders is consistent with emergent holistic conceptualizations of eating disorder recovery, informed by those with lived experience, that highlight the integral roles of social connectedness and emotional well-being to recovery (Kenny & Lewis, 2023).

There is reason to believe that alongside its role in reducing eating disorder symptoms, self-compassion may bolster positive mental health in people with eating disorders. From a theoretical perspective, self-compassion is proposed to activate the soothing system, an emotion regulatory system that developed in tandem with the attachment system and that evolved to regulate threat-related feelings like fear and shame (Gilbert, 2009, 2014). When individuals feel cared for, by self or others, the soothing system is thought to be activated and promotes feelings of safeness, contentment, and well-being (Gilbert et al., 2008). Feelings of safeness, in turn, motivate individuals to be curious, playful, savour the present moment, engage in new experiences, and interact with rather than avoid other people, all of which can further enhance positive emotions and reinforce a sense of social safeness (Gilbert, 2009, 2014, 2020). From an empirical standpoint, research evidence from community and college samples also links trait self-compassion to key indicators of positive mental health. Indeed, individuals higher in the trait of self-compassion tend to report more social safeness (Akin & Akin, 2015), positive affect (Neff et al., 2007), adaptive coping (Ewert et al., 2021), emotional intelligence (Heffernan et al., 2010), as well as relational (Lathren et al., 2021), psychological (Baer et al., 2012), and general well-being (Zessin et al., 2015). Further, findings examining fluctuations in self-compassion levels within a person suggest that treating oneself with more compassion *than usual* on a given day or in a given moment can facilitate more health-promotive behaviours (e.g., healthy and balanced

eating; Li et al., 2020), positive affect (Mey et al., 2023), greater life satisfaction (Zhang et al., 2022), and greater subjective well-being (Zhang et al., 2021). Taken together, there is compelling theoretical and empirical research, derived from outside of the eating disorders literature, to suggest that self-compassion plays an important role in promoting positive mental health.

To our knowledge, only one study has examined whether self-compassion is associated with positive mental health in people with eating disorders. Katan and Kelly (2023) uncovered evidence for this link in women who met DSM-5 criteria for bulimia nervosa. They found that higher daily self-compassion levels and trait levels of self-compassion were both generally associated with greater use of adaptive coping strategies, a key component of positive mental health (WHO, 2022). While these findings offer preliminary support for the links between daily and trait self-compassion with positive mental health, it remains unknown whether the positive associations between self-compassion and well-being extend to other intra- and interpersonal domains of mental health in people with eating disorders. It also remains unknown whether self-compassion plays a similar mental health-promoting role in people experiencing other types of eating disorders, such as anorexia nervosa. Addressing this gap in the literature would allow us to determine whether, in addition to facilitating reduced eating pathology, the practice of self-compassion could allow individuals with eating disorders to enjoy greater well-being, an additionally important outcome.

The Present Study

The goal of the present study was to examine whether self-compassion would be associated with greater positive mental health in people with eating disorders. Given the resources involved in collecting clinical data, we decided to examine our research questions in a pre-existing dataset in our lab. This dataset consisted of repeatedly administered self-report

questionnaires completed over a two-week period by women with AN or atypical AN who were not seeking treatment for their eating disorder. The multilevel data structure of the dataset allowed us to examine the link between self-compassion and mental health at both the between- and within-persons levels. The two variables related to positive mental health were social safeness and positive affect. With these as criteria variables, we sought to test the hypotheses that (1) individuals with AN who were higher in their typical level of self-compassion would generally report greater mental health; and (2) higher levels of self-compassion within a person (2a) on a given day or (2b) than the previous day would be positively associated with greater mental health. We expected the contributions of self-compassion to positive mental health to emerge even when controlling for daily and average eating disorder pathology.

Method

Participants

Recruitment

This study was approved by the University of Waterloo's office of research ethics (ORE #19069). Participants were recruited from online and poster advertisements on a Canadian university campus and in the community as part of a larger study between October 2013 and August 2016. Study advertisements indicated that, to be eligible to participate, individuals must: be female and 17 years of age or older; watch what they eat; and have a body mass index (BMI) between 15-19. Advertisements also indicated that eligible participants would receive up to \$100 CAD in appreciation of their time. The BMI range was later expanded to include individuals with an atypical anorexia nervosa presentation.

Interested participants completed a semi-structured interview via telephone with a trained research assistant to determine whether they met DSM-5 criteria for AN or atypical AN. During

this screening call, individuals were asked to provide information about their height, weight history (i.e., highest, lowest, average, and current weight), restrictive eating behaviours, body dissatisfaction, and fear of weight gain. Individuals were also asked about their current eating disorder treatment and substance use. Individuals who reported behaviours consistent with a co-morbid substance use disorder or who were currently enrolled or seeking treatment for their eating were excluded from the study. Individuals' responses to the interview questions were reviewed by a registered clinical psychologist before being invited to participate. Eligible participants had a follow-up in-person meeting with a trained research assistant during which the study procedures were reviewed, written informed consent was obtained, and participants' height and weight were collected.

Sample Characteristics

A total of 572 individuals expressed interest in the study, and 343 were successfully contacted and assessed by a trained research assistant. Forty-seven of the assessed individuals were deemed eligible and invited to participate, 34 of whom completed at least one daily diary. Consistent with recommendations for handling missing data in daily diary studies (Griffiths et al., 2018), participants ($n = 2$) who completed fewer than three surveys were removed from the final dataset. Further, any nightly surveys that were completed after 5:00 a.m. ($n = 13$) were omitted from the final analyses. This time cut-off was selected as it seemed more likely to represent, in practical terms, early morning the following day rather than late night the preceding day. We wanted to ensure that participant's nightly responses reflected their experiences that day without being affected by the following day's experiences.

The final sample was comprised of 32 women with a mean age of 22.1 ($SD = 4.2$, range = 18-39) and mean BMI of 17.8 kg/m² ($SD = 1.2$, range = 15.4-20.0). A sample of this size

exceeds the minimum recommendation of 30 at the between-persons level (i.e., level-2) needed to yield adequate statistical power when conducting multilevel modelling (Maas & Hox, 2005), and thus was considered sufficiently powered to test the present hypotheses. Given the multilevel data structure, the 14-day study period served to optimize statistical power at the within-persons level (i.e., level-1) while simultaneously minimizing the burden on participants (Bell et al., 2010).

The ethnic breakdown of the final sample was: 38% White, 28% Chinese, 13% South Asian, 6% Southeast Asian, 6% Korean, 3% Black, 3% Arab, and 3% did not respond. Approximately 25% of participants reported receiving a formal eating disorder diagnosis, with all participants confirming that they were not receiving nor were they on a waitlist to receive treatment at the time of their study participation. Results from the diagnostic screening suggest that 75% ($n = 24$) and 25% ($n = 8$) of participants met the diagnostic criteria for AN and atypical AN, respectively. Among these participants, 72% ($n = 23$) met criteria for the restricting subtype and 28% ($n = 9$) for the binge-purge subtype.

Procedure

Participants first completed a battery of baseline questionnaires assessing their eating disorder symptoms and general self-attitudes. Next, as part of a larger ecological momentary assessment study, participants were asked to report on their level of positive affect and social safeness seven times each day for two weeks: six times in response to semi-random signals throughout the day (i.e., signal-contingent recordings) and once each night before bed (i.e., interval-contingent recordings). Participants' daily eating disorder symptoms, as well as their daily self-compassion levels, were assessed each night of the study as part of the interval-contingent recordings. To minimize the likelihood of missing data and participant dropout,

flexibility was provided to participants around the two-week study period such that any data that were obtained within four days of participants' final study day were retained.

Measures

All measures were adapted for state and/or daily use. Omega values for all day-level variables were computed as an estimate of reliability at the within-persons (ω_w) and between-persons (ω_B) level (Geldhof et al. 2014).

Self-compassion

Daily self-compassion was assessed using a total score from the 12-item Self-Compassion Scale-Short Form (SCS-SF; Raes et al., 2011). The SCS-SF assesses the three main components of self-compassion, including Self-Kindness, Common Humanity, and Mindfulness, as well as each component's negative counterpart, namely, Self-Judgment, Isolation, and Over-identification, respectively (Neff, 2003; Raes et al., 2011). Participants used a five-point scale, ranging from 1 (*not at all*) to 5 (*frequently*), to indicate how often they behaved in the stated manner "today" (e.g., "I gave myself the caring and tenderness I needed;" "I tried to be understanding and patient towards those aspects of my personality I don't like"). This measure demonstrated a high degree of internal consistency ($\omega_w = .81$; $\omega_B = .85$).

Social Safeness

Social safeness was assessed using an amended seven-item version of the Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2008) that was adapted for the assessment of state social safeness. Using a five-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*), participants rated the extent to which they experienced their social relationships to be soothing, safe and reassuring (e.g., "I feel connected to others," "I feel understood by people") since the last time point. Participants' SSPS scores across all time points within a given day were averaged

to determine participants' daily level of social safeness; this composite score demonstrated a high degree of internal consistency at the within-persons ($\omega_w = .93$) and between-persons ($\omega_B = .995$) level.

Positive Affect

Positive affect (PA) was assessed using the 10-item PA subscale from the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Using a five-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*), participants rated the extent to which they were *currently* experiencing each positive emotion (e.g., inspired, enthusiastic, excited). Daily PA was computed by averaging participants' PA scores across all time points on a given day. This measure of PA demonstrated a high degree of internal consistency at both levels ($\omega_w = .89$; $\omega_B = .97$).

Body Mass Index (BMI)

Participants' height and weight were measured by a trained research assistant at the start of the study, with standard precautions taken to ensure accurate data (e.g., shoes and outdoor clothing removed, pockets emptied). The collected information was then used to compute their objective BMI (kg/m^2).

Eating Disorder Symptoms

The presence and severity of eating disorder symptomology was assessed on a nightly basis using select items from the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). Due to the repeated administration of this measure, an abbreviated six-item version of the original 28-item EDE-Q was created to include one item from each of the four subscales (i.e., restraint, eating concerns, shape concerns and weight concerns), as well as the key DSM-5 criteria for AN (e.g., deliberately trying to limit food intake and fear of weight gain).

These six items were aggregated to generate a composite measure of daily eating disorder symptoms; this measure demonstrated an acceptable degree of internal consistency at the within-persons ($\omega_w = .72$) and between-persons ($\omega_B = .93$) level.

Analytic Approach

Given the hierarchical data structure whereby days (level-1) were nested within participants (level-2), multilevel modeling using maximum likelihood estimates was used to analyze the data. All analyses were conducted using PROC MIXED in SAS 9.3. Criterion variables were participants' raw scores across all available days on positive affect and social safeness. Two sets of multilevel models were conducted for each criterion variable. Effect sizes were computed for the fixed effect components in all models using semi-partial R^2 (Edwards et al., 2008).

Model 1: Examining the Contribution of Trait and Daily Self-Compassion

Model 1 aimed to test hypotheses 1 and 2a, that trait and daily self-compassion, respectively, would be associated with positive affect and social safeness. To do so, self-compassion was entered as a within-persons (level-1) and between-persons (level-2) predictor variable, both of which were entered as fixed effects. Level-2 (i.e., trait) self-compassion represented participants' mean self-compassion scores across all available study days. Level-1 (i.e., daily) self-compassion was computed by subtracting a participant's average self-compassion score across the two-weeks from her self-compassion score on a given day (Snijders & Bosker, 2012). Accordingly, daily self-compassion represented the extent to which a participant's self-compassion level on a particular day differed from her average level of self-compassion. To control for the effects of eating pathology, both on a given day (i.e., daily eating pathology) and over the course of the study (i.e., average eating pathology), level-1 and level-2

eating pathology variables were created using the same aggregation and disaggregation procedures delineated above (Snijders & Bosker, 2012) and were entered as covariates. Participants' BMI at baseline was entered as a level-2 covariate but was subsequently removed due to its nonsignificant contribution to any of the models. Finally, a random intercept was included in the model.

Model 2: Examining the Contribution of Day-To-Day Changes in Self-Compassion

Model 2 aimed to test hypothesis 2b that changes in self-compassion from the preceding day would be associated with positive affect and social safeness, controlling for the contribution of eating pathology. A difference self-compassion score was computed and added to the model as a level-1 fixed effect; this represented the difference between a participant's self-compassion score on a given day (i.e., at time t) and the previous day (i.e., at time $t-1$). A difference score was computed in the same manner for eating pathology and added to the model as a level-1 covariate; this allowed us to control for the possibility that changes in eating disorder symptoms from one day to the next would contribute to changes in the criterion variable. For each criterion variable (e.g., positive affect), a lag version of the criterion variable (e.g., lagged positive affect) was calculated and added as a level-1 covariate; this represented a participant's score on the criterion variable on the preceding day. As in Model 1, BMI was initially added as a level-2 covariate, however, was subsequently removed due to its nonsignificant contribution to any of the models.

Results

Preliminary Analyses

Participants completed an average of 9.8 surveys ($SD = 3.7$) over the two-week study period. The aggregation of participants' self-compassion scores over the two-weeks revealed a

mean self-compassion score of 3.1 out of 5 ($SD = 0.7$; range = 1.0-4.0), as well as a mean standard deviation of 0.5 (range = 0.2-1.1). The intraclass correlations, descriptive statistics, as well as the within-persons and between-persons correlations for all study variables are provided in Table 1.

Table 1

Descriptive statistics and between- and within-persons correlations between study variables

	<i>M</i>	<i>SD</i>	<i>ICC</i>	1	2	3	4
1. Eating Pathology	3.4	1.0	.82	-	-.03	-.16**	.01
2. Self-Compassion	3.0	0.6	.56	-.25***	-	.65***	.68***
3. Positive Affect	2.3	0.7	.76	-.06	.36***	-	.79***
4. Social Safeness	2.9	1.1	.90	.03	.37***	.38***	-

Note. Means and standard deviations for all variables were based on mean levels across the two weeks. Between-persons correlations are above the diagonal and within-persons correlations are below.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Central Analyses

Findings revealed that both daily and trait self-compassion were positively associated with positive affect and social safeness when controlling for daily and mean eating disorder symptoms (see Model 1, Table 2). Consistent with Hypothesis 1, women with AN and atypical AN who reported higher average levels of self-compassion over the two weeks reported greater levels of positive affect and social safeness. Consistent with Hypothesis 2a, on days when these women reported a higher level of self-compassion than usual, they also reported higher levels of both of these indicators of mental health. Consistent with Hypothesis 2b, findings revealed that increases in self-compassion from the preceding day were significantly associated with higher levels of both positive affect and social safeness (see Table 3). Effect sizes for the observed associations ranged from small to large: there was a large effect of trait self-compassion, a

medium effect of daily self-compassion, and a small effect of increases in self-compassion from the preceding day on both criterion variables (Cohen, 1992).

Table 2

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects from Model 1

Dependent Variable	Fixed Effect					
		<i>B</i>	<i>SE</i>	<i>df</i>	95% CI	R^2_β
Positive Affect	Intercept	0.05	0.54	28	[-1.07, 1.16]	
	Within Persons Predictors					
	Daily Eating Pathology	-0.001	0.05	251	[-0.10, 0.09]	< .01
	Daily Self-Compassion	0.25***	0.04	251	[0.17, 0.33]	.13
	Between Persons Predictors					
	Mean Eating Pathology	-0.03	0.09	28	[-0.21, 0.15]	< .01
Social Safeness	Intercept	-1.01	0.84	28	[-2.74, 0.71]	
	Within Persons Predictors					
	Daily Eating Pathology	0.09	0.05	249	[0.00, 0.18]	.01
	Daily Self-Compassion	0.27***	0.04	249	[0.19, 0.35]	.15
	Between Persons Predictors					
	Mean Eating Pathology	0.08	0.14	28	[-0.20, 0.37]	.01
	Mean Self-Compassion	1.23***	0.21	28	[0.79, 1.66]	.55

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects from Model 2

Dependent Variable	Fixed Effect					
		<i>B</i>	<i>SE</i>	<i>df</i>	95% CI	R^2_β
Positive Affect	Intercept	2.23***	0.13	30	[1.96, 2.49]	
	Lagged Positive Affect	0.21***	0.06	233	[0.10, 0.33]	.06
	Difference Eating Pathology	0.003	0.04	233	[-0.07, 0.08]	< .01
	Difference Self-Compassion	0.14***	0.03	233	[0.08, 0.20]	.08
Social Safeness	Intercept	2.97***	0.21	29	[2.55, 3.40]	
	Lagged Social Safeness	0.36***	0.06	223	[0.23, 0.48]	.13
	Difference Eating Pathology	0.01	0.04	223	[-0.06, 0.08]	< .01
	Difference Self-Compassion	0.13***	0.03	223	[0.07, 0.20]	.08

* $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

The present study was the first to examine whether self-compassion can contribute to markers of positive mental health, namely positive affect and social safeness, in women with eating disorders. Consistent with hypotheses, findings at the trait-level suggest that women with AN and atypical AN who generally respond to their own distress with relatively more self-compassion report higher levels of positive affect and social safeness. As hypothesized, findings at the within-persons level revealed that day-to-day fluctuations in self-compassion also contributed to participants' experience of positive affect and social safeness. Specifically, on days when individuals with AN and atypical AN responded to personal distress with more compassion than was typical for them, they reported more positive mood states and a greater sense of safeness, comfort, and warmth in their social relationships. In addition, individuals reported higher levels of social safeness and positive affect on days when they treated themselves

with more compassion than the previous day. Taken together, findings from the present study highlight the contribution of trait, daily, and day-to-day fluctuations in self-compassion to markers of positive mental health in individuals with eating disorders.

It is noteworthy that self-compassion was consistently associated with indicators of positive mental health, even when controlling for participants' daily and average eating pathology. These findings suggest that, independent of their dietary restraint, eating concerns, and weight and shape concerns, individuals with AN and atypical AN may still experience improvements in their emotional and social well-being by treating themselves with compassion. While not the focus of the present study, future research would benefit from exploring the different pathways through which self-compassion might facilitate positive psychological functioning in individuals with active eating disorders. For example, it might be that, as proposed by Gilbert (2005), caring for oneself activates the soothing system which, in turn, softens the defenses that traditionally hinder positive social-emotional experiences. It would be interesting to test whether this is the case and whether as a result, individuals may be better able to mindfully engage with and savour pleasant experiences, and be more attuned and receptive to warmth and support from those around them. Moreover, the capacity for individuals with anorexia nervosa to experience markers of positive mental health independent of their eating disorder symptoms is also aligned with the dual continuum model of mental health (Keyes, 2005), and contributes to the evolving literature base exploring the associations between psychopathology and well-being in individuals with eating disorders (e.g., de Vos et al., 2018).

Contributions and implications

The present study is one of the first to show that self-compassion can bolster markers of positive mental health in people with eating disorders. Alongside prior work which suggests that

self-compassion may facilitate reduced eating disorder symptoms (Turk & Waller, 2020), the present study highlights an additional, mental health-enhancing benefit. Given that our sample consisted of individuals who were not seeking treatment for their eating disorder, findings suggest that for those who are not currently motivated or able to address their current eating disorder symptoms, the development of self-compassion may still confer greater socio-emotional well-being. In support of this suggestion is prior research on this same population demonstrating high adherence to, and psychosocial benefits from, self-compassion practices (Kelly & Waring, 2018). While positive mental health is important to promote in its own right, it is also possible that improved mental health could enhance motivation for, and later success in, eating disorder treatment (Geller et al., 2009; Muñoz et al., 2012). Indeed, decreases in psychiatric distress over five months were associated with improvements in motivation for change in highly ambivalent individuals with eating disorders (Geller et al., 2009).

It is interesting that treating oneself with more compassion than usual, both on a given day and than the previous day, was associated with greater feelings of safeness in one's interpersonal relationships. While trait self-compassion has been previously found to buffer against the negative effects of interpersonal concerns on eating pathology (Pinto-Gouveia et al., 2014), findings from the present study are the first to suggest that the extent to which an individual treats themselves with compassion might additionally contribute to enhanced feelings of acceptance, belonging, and connectedness in one's social relationships. Given that feelings of social safeness are thought to be particularly important for individuals with eating disorders to cultivate (Gilbert, 2007; Pinto-Gouveia et al., 2014), the present findings might suggest that interventions designed to alter the ways in which individuals relate to themselves, even on a given day, may be meaningfully related to how they experience their relationships with others

that day and the next day. In addition to establishing the replicability of the observed associations, future research should employ experimental designs to determine the causal effects of manipulating daily self-compassion on feelings of social safeness. Given that the measure of social safeness used in the present study assumed homogeneity in experiences of safeness across relationships, it might also be interesting to examine whether changes in self-compassion influence experiences of safeness in all social relationships, or whether contributions differ based on the nature of the relationship.

Strengths, limitations, future directions

The present study of people with AN and atypical AN was strong in its use of repeated measurements, both within a day (i.e., positive affect and social safeness) and at the end of each day (i.e., self-compassion and eating disorder symptoms), to assess the contribution of self-compassion to positive mental health in an ecologically valid way. However, several limitations should be addressed in future research. First, the present study was conducted using a non-treatment seeking sample of women; findings should be replicated in more diverse samples, including those containing a mix of gender identities and among individuals experiencing more severe eating disorder symptoms. Second, while daily positive affect and social safeness scores were derived from aggregating multiple self-reports within a given day, self-compassion was measured once per day and prompted participants to retrospectively reflect on how they treated themselves over the course of the day. Although end-of-day measurements are typical in daily diary studies, such assessments can be subject to retrospective bias (Bolger et al., 2003), and thus, future work should consider assessing self-compassion at multiple timepoints within a day. Third, the correlational study design prevents causal inferences regarding the impact of self-compassion on positive affect and social safeness; future experimental studies are needed.

Finally, although this study satisfied the minimum recommended sample size of 30 participants at level-2 needed for multilevel modelling (Maas & Hox, 2005), a larger sample size at level-2 and a greater number of units at level-1 (i.e., days) would allow for even greater statistical power.

Conclusions

Individuals with eating disorders report impairments in domains related to positive mental health yet little is known about factors that promote positive psychosocial functioning in these individuals. The present findings are among the first to suggest that self-compassion may enhance indicators of both emotional and social well-being in this population. Results revealed that individuals with AN and atypical AN who generally treat themselves with more self-compassion, and who treat themselves with more self-compassion than usual and/or than the day before, may experience improved mental health.

Study 2: A daily diary study of self-compassion and adaptive coping behaviours in women with symptoms of bulimia nervosa

Study 1 of this dissertation provided preliminary support for the notion that self-compassion might contribute to markers of positive mental health, namely, positive affect and social safeness, in the daily lives of individuals with eating disorders. While informative, there are various outstanding questions from Study 1 that remain. First, Study 1 relied on a small community sample of women with anorexia nervosa; however, it remains unclear whether the associations between self-compassion and markers of positive mental health would emerge in larger, more strongly powered samples of individuals with different eating disorder diagnoses. Second, while Study 1 examined the contribution of self-compassion levels to affective markers of positive mental health, specifically positive affect and social safeness, there is a need to establish whether self-compassion similarly enhances behavioural markers of positive mental health, such as the use of adaptive coping behaviours.

Study 2 aimed to extend the findings of Study 1 by broadening the scope of the outcome variables to assess behavioural markers of positive mental health, as well by using a larger sample of women with symptoms of bulimia nervosa. Specifically, 124 women with bulimia nervosa were asked to complete nightly measures of their use of adaptive coping strategies, self-compassion, and eating disorder symptoms each night for a total of two weeks. Study 2 continued to examine the contribution of self-compassion to markers of positive mental health at both the within-person level, on a given day and on the preceding day, and the between-persons level, across the two-week study period. Individuals with bulimia nervosa tend to rely on more maladaptive coping behaviours to cope with negative emotions or heightened distress than individuals with anorexia nervosa and healthy controls (Perthes et al., 2021). Thus, elucidating

whether self-compassion might promote individuals' use of adaptive coping strategies, which is a key component of positive mental health (World Health Organization, 2022, para. 1), would be particularly relevant for individuals with symptoms of bulimia nervosa.

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Katan, A., & Kelly, A. C. (2023). A daily diary study of self-compassion and adaptive coping behaviours in women with symptoms of bulimia nervosa. *Journal of Eating Disorders*, 11, Article 50. <https://doi.org/10.1186/s40337-023-00755-6>.

Introduction

Background

There is a call in the eating disorders field to identify factors that not only reduce eating disorder symptoms but that also bolster mental health. The World Health Organization defines mental health as “a state of well-being in which an individual realizes [their] own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to [their] community” (World Health Organization, 2022, para. 1). At present, there is a substantive body of literature on people with eating disorders exploring factors and treatment approaches that reduce eating pathology; however, there is a dearth of research on factors that promote mental health in this population.

An introduction to adaptive coping

Although there are various components of mental health, the ability to cope adaptively with stress is particularly relevant to individuals with eating disorders (Ball & Lee, 2000; Troop et al., 1994). Coping is a multidimensional construct that refers to the cognitive and behavioural

efforts an individual employs to manage internal and/or external demands that they perceive to be distressing (Lazarus & Folkman, 1984). Problem-focused coping refers to efforts that are aimed at eliminating or mitigating the impact of the stressor itself; these efforts can include planning, suppressing competing demands, and/or asking another person for practical, or instrumental, support (Carver & Connor-Smith, 2010; Carver et al., 1989). Emotion-focused coping broadly refers to efforts that are aimed at reducing or managing the distress that is triggered by the stressor (Carver & Connor-Smith, 2010; Carver et al., 1989). Emotional *avoidance* coping strategies involve directing attention *away* from the stressor, for example, via denial or distraction, whereas emotional *approach* coping strategies involve active engagement with one's emotions, for example, by letting oneself cry or seeking emotional support from others (Stanton et al., 2000). Whereas emotional avoidance coping is almost always maladaptive and linked to psychopathology, problem-focused and emotional approach coping strategies are regarded as adaptive and related to reduced distress, greater positive mental health, and greater resilience (Kashdan et al., 2006; Smith et al., 2002).

There is an expansive body of literature suggesting that individuals with eating disorder symptoms experience high levels of daily distress (Crowther et al., 2001; Dang et al., 2021), with which they generally cope through emotional avoidance, compromising their mental health (Ball & Lee, 2000; Bloks et al., 2001; Corstorphine et al., 2007; Janzen et al., 1992).

Self-compassion and adaptive coping

Self-compassion is one factor that may promote more adaptive forms of coping in individuals with eating disorders. Self-compassion is conceptualized as a motivation to both attend to one's suffering from a caring orientation as well as to alleviate and prevent current and future suffering (Gilbert, 2014; K. Neff, 2003). According to Kristin Neff (2003), self-

compassion involves approaching personally distressing experiences with a mindful and curious stance, a spirit of inner-kindness and warmth, and the perspective that suffering is shared by all humans. Research suggests that self-compassion levels vary between people, with certain individuals reporting higher trait levels than others (K. D. Neff, 2003), and also within a person, with a given individual responding to their distress more self-compassionately on some days compared to other days (Breines et al., 2014; Kelly & Stephen, 2016). In individuals with eating disorders, both daily (Katan & Kelly, 2021; Kelly et al., 2020) and trait (Kelly et al., 2014; Turk & Waller, 2020) self-compassion levels have been consistently linked to reduced eating pathology, and self-compassion interventions have been found to reduce eating disorder symptoms over time (Gale et al., 2014; Kelly & Carter, 2015; Turk & Waller, 2020). Research has yet to explore whether self-compassion might also promote mental health, and specifically adaptive coping, in this population.

There is theoretical and empirical reason to believe that self-compassion might promote the use of adaptive coping behaviours in individuals with eating disorders. Self-compassion involves being sensitive to one's distress with an eye toward alleviating it. As a result, self-compassion is likely to motivate individuals to experience and make sense of their feelings, and to enact appropriate strategies to help themselves feel better, e.g., reaching out to trusted others and/or problem solving (Gilbert, 2005). The empirical association between trait self-compassion and adaptive coping behaviours has been extensively documented outside of the field of eating disorders (Chishima et al., 2018; Costa & Pinto-Gouveia, 2013; Leary et al., 2007; Neff et al., 2005; Sirois et al., 2015) with some evidence suggesting that daily levels of self-compassion are similarly linked to adaptive coping (Dupasquier et al., 2020; Hermanto et al., 2017). Thus, it

seems likely that self-compassion might also facilitate adaptive coping in people with eating disorders.

The present study

Using data from a two-week daily diary, the present study examined whether differences in (1) average, or trait, self-compassion levels between people, and (2) self-compassion levels within a person from one day to the next, contribute to variability in adaptive coping behaviours in women with symptoms of bulimia nervosa. We hypothesized that there would be a greater use of problem-focused coping strategies (i.e., problem-solving, seeking and receiving instrumental support) and emotional approach coping strategies (i.e., seeking and receiving emotional support) (1) among individuals with higher trait self-compassion levels, and (2) on days when individuals were more self-compassionate than (2a) their personal mean level and (2b) the preceding day. Given that participants' eating disorder symptoms may influence their choice of coping strategies (Fitzsimmons & Bardone-Cone, 2010) and their likelihood of being self-compassionate (Katan & Kelly, 2021), we sought to examine whether the hypothesized associations would emerge even when controlling for participants' average and daily eating disorder symptoms.

Methods

Study data

This study utilized participant data that was previously analyzed by Katan and Kelly (2021). While the present research questions and hypotheses are unique from those in the prior paper and were devised a priori during study development, we acknowledge that the current study was not preregistered.

Participants

Participants were 124 cis women ($M_{\text{age}} = 26.47$, $SD_{\text{age}} = 8.31$) who were recruited from online and poster advertisements in the community and from an undergraduate participant pool as part of a larger study. To be eligible, participants had to meet the following criteria: female, 18 years of age or older, binge eat and compensate for binges (e.g., vomit, use laxatives) on average at least once per week, minimum body mass index (BMI) of 18.5 kg/m^2 ($M_{\text{BMI}} = 26.75$, $SD_{\text{BMI}} = 5.46$), and have nightly internet access.

Interested individuals consented to the pre-screen survey and completed the Eating Disorder Diagnostic Scale (Stice, n.d.; Stice et al., 2000) via Qualtrics; a trained research assistant then verified symptoms via telephone to ensure they met DSM-5 criteria for bulimia nervosa. All participants provided informed consent prior to study participation. Reimbursement for study participation was an Amazon.ca gift card (up to \$50 CAN) and/or study participant pool credit (for some undergraduate participants). The institutional research ethics board approved this study, and the study was conducted in accordance with the institution guidelines and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

Approximately 33% of the sample reported previously receiving a formal eating disorder diagnosis, and 79% of participants self-identified as having an eating disorder at the start of the study. Further, 9.7% ($n = 12$) of participants reported being in eating disorder treatment at the time of participation; this included outpatient treatment, private therapy, and/or sessions with a dietician. The ethnic composition of the final sample was 46.0% White, 12.1% Chinese, 12.9% South Asian, 7.3% Latin American, 5.6% Black, 5.6% Southeast Asian, 1.6% Filipino, 1.6% Arab, 1.6% Korean, and 5.6% Other.

Procedure

Participants were asked to complete an online questionnaire about their daily experiences and eating behaviours via Qualtrics for 14 consecutive nights. A link to the questionnaire was emailed to participants at 8:00 p.m. each night of their study participation. All participants were instructed to complete the questionnaire before bed to ensure that all daily eating behaviours were reflected in their nightly reports.

Measures

The following measures were completed on a nightly basis, each of which was modified for daily use by instructing participants to respond to each measure based on “today”. Omega values were computed for each multi-item measure as an estimate of reliability at the within-persons (ω_w) and between-persons (ω_B) level (Geldhof et al., 2014).

Self-compassion

Daily self-compassion was assessed using the 12-item Self-Compassion Scale-Short Form (Raes et al., 2011). Participants used a five-point scale ranging from 1 (*almost never*) to 5 (*almost always*) to indicate how often they behaved in the stated manner that day (e.g., “When I was going through a very hard time, I gave myself the caring and tenderness I needed”). This measure demonstrated an acceptable degree of internal consistency ($\omega_w = .76$; $\omega_B = .92$).

Problem-solving

The 11-item, three-point (1 = *not at all* to 3 = *a lot*) Problem-Solving Subscale from the Coping Strategies Indicator (Amirkhan, 1990) was used to assess the extent to which participants engaged in problem-focused coping strategies (e.g., planning) to manage a situational stressor they encountered that day (e.g., “Rearranged things so your problem could be solved”). This measure demonstrated a high degree of internal consistency ($\omega_w = .90$; $\omega_B = .98$). This measure

was added shortly after data collection began, and thus, was not completed by 11/124 participants.

Instrumental social support

Instrumental social support sought. A four-item subscale from the COPE inventory (Carver et al., 1989) was used to assess social support sought for instrumental reasons.

Participants used a four-point scale ranging from 1 (*I didn't do this at all*) to 4 (*I did this a lot*) to rate the extent to which they sought instrumental social support in response to difficult or stressful events that day (e.g., “I talked to someone who could do something concrete about the problem”). This measure demonstrated a high degree of internal consistency ($\omega_w = .87$; $\omega_B = .98$).

Instrumental social support received. Received instrumental social support was assessed using a single item adapted from the Social Provisions Scale (i.e., “Another person(s) helped you with daily tasks like transportation, studying, or other errands”; Cutrona & Russell, 1987). Participants were asked to rate the extent to which others provided them with instrumental support that day using a seven-point scale, ranging from 1 (*not at all*) to 7 (*very much*).

Emotional social support

Emotional social support sought. On a four-point scale ranging from 1 (*I didn't do this at all*) to 4 (*I did this a lot*), participants rated the extent to which they attempted to seek emotional social support in response to stressors that day using a four-item subscale from the COPE inventory (e.g., “I tried to get emotional support from friends or relatives”; Carver et al., 1989). The scale demonstrated a high degree of internal consistency ($\omega_w = .91$; $\omega_B = .99$).

Emotional social support received. Received emotional social support was assessed with a one-item measure which was adapted from the Social Provisions Scale (e.g., “You had

interactions with others in which the other person provided you with a sense of emotional security and well-being”; Cutrona & Russell, 1987). Participants were asked to rate the extent to which others provided them with emotional support that day using a seven-point scale, ranging from 1 (*not at all*) to 7 (*very much*).

Eating disorder symptoms

Daily eating disorder symptoms relevant to bulimia nervosa – namely, binge eating and use of inappropriate compensatory behaviours – were assessed via a series of checklist items. Each night, participants were provided with the definition of a binge: “an amount of food that you consider excessive or an amount of food that other people would consider excessive, with an associated loss of control or the feeling of being driven or compelled to keep eating” (Crosby et al., 2009; Smyth et al., 2007). They then indicated whether they binged that day (i.e., dummy coded as: 1 = *I binged*; 0 = *I did not binge*). Participants also indicated which, if any, compensatory behaviours they engaged in that day from a list of six: vomiting, laxative use, diuretic use, meal skipping, exercising, and drinking fluids to curb appetite. Days involving any compensatory behaviour were assigned a score of 1, and those that did not were assigned a score of 0.

Analytic approach

Multilevel models using maximum likelihood estimates were conducted using PROC MIXED in SAS 9.3. Criterion variables were participants’ raw scores across all available days on problem-solving, social support sought for emotional reasons, emotional support received, social support sought for instrumental reasons, and instrumental support received. Given that past simulation studies reveal that samples containing 50 or more units at the between-persons level (i.e., level-2) yield adequate statistical power in multilevel data studies (Maas & Hox, 2005), we

considered the present sample of 124 participants to be sufficiently powered to test the between-persons hypotheses. To optimize statistical power at the within-persons level, while also minimizing participant burden (Bell et al., 2010), a 14-day period of data collection was selected.

Variable creation

Level-1. A predictor variable representing daily self-compassion was calculated by subtracting a participant's mean self-compassion score over the study period from her self-compassion score on a particular day (Snijders & Bosker, 2012). Thus, daily self-compassion represented the extent to which a participant's self-compassion level on a given study day deviated from her average level of self-compassion over the two-week study period. In addition, a difference self-compassion score was computed to represent the change in a participant's self-compassion level on a given day (i.e., at time t) from the previous day (i.e., at time $t-1$). Significant positive contributions of daily self-compassion to criteria variables would indicate that, consistent with Hypothesis 2a, participants report more adaptive coping on days where they are more self-compassionate than usual. A significant positive contribution of difference in self-compassion would indicate that participants cope more adaptively on days when they are more self-compassionate than the day before, consistent with Hypothesis 2b.

In addition to the primary predictor variables, several level-1 covariate variables were created. For Model 1, variables representing daily eating disorder symptoms (i.e., binge eating and use of compensatory behaviours) were created using the dummy-coded procedures outlined above. No centering procedures were applied as these variables had meaningful zero points (Enders & Tofighi, 2007). For Model 2, a difference score was computed for both binge eating and the use of compensatory behaviours; the purpose of this level-1 covariate was to control for changes in eating disorder symptoms from the preceding day. Additionally, for each criterion

variable (e.g., problem-solving) in Model 2, a lag version of the criterion variable (e.g., lagged problem-solving) was computed; this represented a participant's score on the criterion variable on the previous day (i.e., at time $t-1$).

Level-2. As in prior work (e.g., Kelly & Stephen, 2016), trait (i.e., mean) self-compassion was calculated by taking the mean of participants' self-compassion scores across all available study days. Covariate variables representing participants' trait (i.e., mean) binge eating and use of inappropriate compensatory behaviours were computed in a similar manner.

Multilevel models

Two multilevel models were conducted for each criterion variable, with each model being comprised of fixed effects and a random intercept. Initially, BMI was entered as a level-2 covariate in all models but was subsequently removed due to its nonsignificant contribution across all models; none of the reported findings were affected by the omission of BMI.

Model 1. Model 1 tested Hypotheses 1 and 2a that trait self-compassion and daily self-compassion, respectively, would be associated with greater use of adaptive coping behaviours, independent of one's eating disorder symptoms. In Model 1, self-compassion was entered as a fixed effects within-persons predictor variable (i.e., daily self-compassion; level-1) and between-persons (level-2) predictor variable. Binge eating and use of inappropriate compensatory behaviours were entered as both within-persons and between-persons fixed effect covariate variables. A random intercept was also included in this model.

Model 2. Model 2 tested Hypothesis 2b, that increases in self-compassion from the preceding day would be associated with greater use of adaptive coping strategies, when controlling for the preceding day's level of adaptive coping and changes in eating disorder symptoms from the preceding day. To do so, Model 2 was comprised of the following within-

persons (level-1) fixed effects: a difference self-compassion score, a difference score for both binge eating and use of inappropriate compensatory behaviours, and a lagged version of the respective criterion variable. A random intercept was also included in the model.

Results

Preliminary analyses

Participants responded to an average of 12.43 ($SD = 2.00$) nightly surveys. Within-persons, the mean self-compassion score over the two weeks was 2.59 out of 5 ($SD = 0.59$; range = 1.14–3.97) and the mean standard deviation (i.e., the average variability in daily self-compassion scores) was 0.45 (range = 0.06–1.07). The descriptive statistics as well as the intraclass, Pearson (i.e., between-persons), and repeated measures (i.e., within-persons) correlations for all study variables are presented in Table 4.

Table 4*Descriptive statistics and between- and within-persons correlations between study variables*

	<i>M</i>	<i>SD</i>	<i>ICC</i>	1	2	3	4	5	6	7	8
1. Self-Compassion	2.59	0.59	.563	-	.17	.20*	.28**	.20*	.25**	-.07	.05
2. Problem-Solving	1.83	0.38	.373	.15***	-	.52***	.31***	.50***	.38***	-.22*	-.03
3. Instrumental Support Sought	1.70	0.54	.378	.07**	.24***	-	.61***	.81***	.59***	-.12	.06
4. Instrumental Support Received	2.77	1.27	.352	.11***	.13***	.32***	-	.64***	.63***	-.04	.03
5. Emotional Support Sought	1.87	0.57	.355	.09***	.26***	.68***	.31***	-	.76***	-.16	.01
6. Emotional Support Received	3.25	1.32	.405	.14***	.20***	.48***	.43***	.55***	-	-.06	.005
7. Binge Eating	5.31	2.52	.070	-.13***	-.03	.01	-.04	-.03	-.01	-	-.25**
8. Compensatory Behaviours	11.12	3.49	.194	-.08**	.001	-.03	-.003	-.02	-.01	-.01	-

Note. Means and standard deviations for all variables were based on mean levels across the two weeks. Between-persons correlations are above the diagonal and within-persons correlations are below. Between-persons correlations represent correlations between person-level means and thus reflect the extent to which participants' mean scores on the different measures over the two weeks were related to one another. Within-person correlations represent the extent to which a participant's scores on different measures on a given day were related to one another.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Central analyses

Problem-solving

In Model 1, which controlled for trait and daily eating disorder symptoms, trait self-compassion levels were not associated with the use of problem-solving strategies, contrary to Hypothesis 1, but daily self-compassion levels were positively related (see Table 5). That is, consistent with Hypothesis 2a, on days when participants were more self-compassionate than their typical level, they reported using more problem-solving strategies when faced with a stressful situation. When examining the contribution of day-to-day changes in self-compassion in Model 2, results revealed that, consistent with Hypothesis 2b, increases in self-compassion levels from the previous day were associated with a greater use of problem-solving strategies, even when controlling for changes to eating pathology from the previous day and the previous day's problem-solving strategies (see Table 6).

Instrumental social support

Controlling for mean and daily eating disorder symptoms over the two weeks, trait self-compassion and daily self-compassion were both positively associated with social support sought and social support received for instrumental reasons in Model 1 (see Table 5). In other words, consistent with Hypothesis 1, individuals who reported higher average levels of self-compassion over the study period reported seeking more instrumental support from others and receiving more instrumental support from others. Further, consistent with Hypothesis 2a, instrumental support sought and received from others was higher on days of higher-than-usual self-compassion. Findings from Model 2 revealed that, as predicted in Hypothesis 2b, increases in self-compassion from one day to the next were associated with greater instrumental social support sought and received (see Table 6). This finding emerged when controlling for the

previous day's instrumental social support sought and received, as well as changes in eating disorder symptoms from the previous day.

Emotional social support

When controlling for both trait and daily self-compassion, trait self-compassion was positively associated with social support that was both sought and received for emotional reasons in Model 1 (see Table 5). Thus, consistent with Hypothesis 1, participants with higher average levels of self-compassion reported both seeking and receiving more emotional social support. Daily self-compassion was also positively related to emotional social support sought and received in Model 1. That is, in line with Hypothesis 2a, on days that participants reported higher-than-usual self-compassion levels, they also reported seeking and receiving greater levels of social support for emotional reasons. In Model 2, findings revealed that, consistent with Hypothesis 2b, increases in self-compassion from the preceding day were associated with greater emotional support *received* from others (see Table 6), even when controlling for emotional social support sought and received on the previous day as well as changes in eating disorder symptoms from the previous day. However, contrary to Hypothesis 2b, increases in self-compassion from one day to the next were not associated with emotional social support *sought* from others in Model 2

Table 5

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects from Model 1

Dependent Variable	Fixed Effect	<i>B</i>	<i>SE</i>	<i>df</i>	95% CI	R^2_β
Problem-Solving	Intercept	1.50***	0.21	108	[1.08, 1.91]	
	Within Persons Predictors					
	Daily Self-Compassion	0.13***	0.03	1169	[0.08, 0.18]	.02
	Daily Binge Eating	-0.01	0.03	1169	[-0.06, 0.05]	<.01
	Daily Comp. Beh.	0.02	0.04	1169	[-0.06, 0.10]	<.01
	Between Persons Predictors					
	Mean Self-Compassion	0.10	0.06	108	[-0.01, 0.22]	.03
	Mean Binge Eating	-0.25	0.18	108	[-0.61, 0.12]	.02
	Mean Comp. Beh.	0.23	0.17	108	[-0.10, 0.56]	.02
Instrumental Social Support Sought	Intercept	1.27***	0.29	120	[0.70, 1.85]	
	Within Persons Predictors					
	Daily Self-Compassion	0.10**	0.03	1391	[0.03, 0.16]	.01
	Daily Binge Eating	0.02	0.04	1391	[-0.05, 0.10]	<.01
	Daily Comp. Beh.	-0.05	0.06	1391	[-0.16, 0.06]	<.01
	Between Persons Predictors					
	Mean Self-Compassion	0.17*	0.08	120	[0.01, 0.33]	.04
	Mean Binge Eating	-0.37	0.25	120	[-0.87, 0.12]	.02
	Mean Comp. Beh.	0.23	0.22	120	[-0.21, 0.67]	.01
Instrumental Social Support Received	Intercept	0.91	0.67	120	[-0.41, 2.22]	.01
	Within Persons Predictors					
	Daily Self-Compassion	0.33***	0.09	1392	[0.16, 0.50]	<.01
	Daily Binge Eating	-0.09	0.09	1392	[-0.27, 0.08]	<.01
	Daily Comp. Beh.	0.06	0.14	1392	[-0.22, 0.33]	
	Between Persons Predictors					
	Mean Self-Compassion	0.60**	0.18	120	[0.24, 0.97]	.08
	Mean Binge Eating	-0.45	0.58	120	[-1.59, 0.68]	.01
	Mean Comp. Beh.	0.63	0.51	120	[-0.38, 1.64]	.01

Dependent Variable	Fixed Effect	<i>B</i>	<i>SE</i>	<i>df</i>	95% CI	<i>R</i> ² _β
Emotional Social Support Sought	Intercept	1.45***	0.31	120	[0.84, 2.06]	
	Within Persons Predictors					
	Daily Self-Compassion	0.12**	0.04	1391	[0.05, 0.20]	.01
	Daily Binge Eating	-0.02	0.04	1391	[-0.10, 0.06]	<.01
	Daily Comp. Beh.	-0.02	0.06	1391	[-0.14, 0.10]	<.01
	Between Persons Predictors					
	Mean Self-Compassion	0.17*	0.08	120	[0.01, 0.34]	.03
	Mean Binge Eating	-0.46	0.27	120	[-0.99, 0.06]	.02
	Mean Comp. Beh.	0.26	0.24	120	[-0.21, 0.72]	.01
Emotional Social Support Received	Intercept	2.02**	0.70	120	[0.63, 3.42]	
	Within Persons Predictors					
	Daily Self-Compassion	0.42***	0.08	1391	[0.27, 0.58]	.02
	Daily Binge Eating	0.04	0.08	1391	[-0.13, 0.21]	<.01
	Daily Comp. Beh.	0.02	0.13	1391	[-0.24, 0.27]	<.01
	Between Persons Predictors					
	Mean Self-Compassion	0.53**	0.19	120	[0.15, 0.92]	.06
	Mean Binge Eating	-0.63	0.61	120	[-1.83, 0.58]	.01
	Mean Comp. Beh.	0.10	0.54	120	[-0.96, 1.17]	<.01

Note. Comp. Beh. = Compensatory Behaviours.

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

Table 6

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects from

Model 2

Dependent Variable	Fixed Effect	<i>B</i>	<i>SE</i>	<i>df</i>	95% CI	R^2_β
Problem-Solving	Intercept	1.68***	0.06	108	[1.56, 1.81]	
	Lagged Problem-Solving	0.09**	0.03	1015	[0.03, 0.15]	.01
	Difference Binge Eating	0.002	0.02	1015	[-0.04, 0.04]	<.01
	Difference Comp. Beh.	0.05	0.03	1015	[-0.01, 0.11]	<.01
	Difference Self-Compassion	0.11***	0.02	1015	[0.06, 0.15]	.02
Instrumental Social Support Sought	Intercept	1.48***	0.06	123	[1.36, 1.61]	
	Lagged Inst. Supp. Sought	0.13***	0.03	1242	[0.08, 0.18]	.02
	Difference Binge Eating	0.02	0.03	1242	[-0.03, 0.07]	<.01
	Difference Comp. Beh.	-0.03	0.04	1242	[-0.11, 0.05]	<.01
	Difference Self-Compassion	0.06*	0.03	1242	[.002, 0.12]	<.01
Instrumental Social Support Received	Intercept	2.45***	0.12	123	[2.20, 2.70]	
	Lagged Inst. Supp. Received	0.11***	0.03	1243	[0.06, 0.16]	.02
	Difference Binge Eating	-0.10	0.07	1243	[-0.23, 0.03]	<.01
	Difference Comp. Beh.	-0.02	0.10	1243	[-0.22, 0.18]	<.01
	Difference Self-Compassion	0.20**	0.07	1243	[0.05, 0.34]	.01
Emotional Social Support Sought	Intercept	1.67***	0.07	123	[1.53, 1.80]	
	Lagged Emot. Supp. Sought	0.11***	0.03	1243	[0.06, 0.16]	.01
	Difference Binge Eating	-0.01	0.03	1243	[-0.07, 0.05]	<.01
	Difference Comp. Beh.	-0.03	0.05	1243	[-0.11, 0.06]	<.01
	Difference Self-Compassion	0.05	0.03	1243	[-0.01, 0.12]	<.01
Emotional Social Support Received	Intercept	3.04***	0.14	123	[2.77, 3.32]	
	Lagged Emot. Supp. Received	0.07**	0.03	1241	[0.02, 0.12]	.01
	Difference Binge Eating	0.03	0.06	1241	[-0.09, 0.15]	<.01
	Difference Comp. Beh.	-0.08	0.10	1241	[-0.27, 0.10]	<.01
	Difference Self-Compassion	0.21**	0.07	1241	[0.08, 0.35]	.01

Note. Comp. Beh. = Compensatory Behaviours; Inst. Supp. = Instrumental Social Support; Emot. Supp. = Emotional Social Support. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

Although self-compassion has been consistently linked to reduced eating pathology in people with eating disorders, this was the first study to examine whether self-compassion levels may be associated with indicators of positive mental health in this population. Our 14-day daily diary study of individuals with symptoms of bulimia nervosa revealed that natural fluctuations in self-compassion levels from day to day, and trait or average self-compassion levels over this time period, were generally associated with the use of more adaptive coping strategies. Thus, these findings suggest that by treating themselves with more self-compassion, individuals with eating disorder symptoms may experience more positive mental health.

At the between-persons level, trait levels of self-compassion were positively associated with the seeking and receiving of both instrumental and emotional social support, suggesting that those individuals with symptoms of bulimia nervosa who generally responded more self-compassionately to their distress sought and received more social support. Contrary to past research in non-eating disorder samples (Ewert et al., 2021), trait self-compassion levels were unrelated to the use of problem-solving strategies. It is possible that the divergent finding is related to differences in study population – i.e., clinical versus non-clinical – and/or measurement. We measured trait self-compassion by aggregating daily self-reports of self-compassion rather than cross-sectionally asking people to report on their typical tendencies, as in other studies. Although aggregated self-report measures typically yield more reliable assessments than single administrations of a self-report scale (Roberts, 2018), these forms of measurement typically only correlate moderately with one another (Augustine & Larsen, 2012) meaning caution should be taken when comparing our trait-level findings about self-compassion to past research.

At the within-persons level, findings revealed that on days when participants were more self-compassionate than their usual level or than the preceding day's level, they engaged in more problem-focused coping aimed at directly reducing stressors, namely problem-solving strategies (e.g., planning, organizing) and the seeking and receiving of instrumental (i.e., practical) social support. Similarly, days of higher-than-usual self-compassion were associated with more emotional approach coping strategies aimed at reducing emotional distress adaptively, like seeking and receiving emotional social support from others. In addition, increases in self-compassion from the day before were associated with more emotional support *received* from others but were unrelated to efforts to *seek* emotional social support. Overall, findings at the within-person level suggest that the day-to-day fluctuations in self-compassion levels that individuals with bulimia nervosa experience are relevant to their capacity to cope adaptively with distress.

It is important to highlight that at both the within-persons and between-persons levels, self-compassion contributed to adaptive coping while controlling for the contributions of participants' daily and average eating disorder symptoms (i.e., binge eating and inappropriate compensatory behaviours). As such, our findings suggest that self-compassion might contribute to mental health-promoting behaviours independent of how symptomatic individuals are, reinforcing the notion that mental illness and mental health are not mutually exclusive (Keyes, 2005).

Strengths, limitations, and future directions

The present study had several strengths, including the low attrition rate, high ecological validity, and use of repeated measurement. However, there are several limitations that highlight directions for future research. A first limitation of this study lies in the women-only sample.

Second, a self-report screening tool screened for bulimic symptoms. Future research should study individuals of other gender identities and incorporate a structured diagnostic interview. Third, effect sizes were small. Nevertheless, recommendations urge against dismissing small effects as trivial when the outcome examined is important (Barry et al., 2016) as in the case of mental health. Fourth, future research should examine the replicability of the present findings, as well as build on the present work by examining whether self-compassion promotes other markers of mental health in individuals with eating disorders, such as interpersonal well-being. Fifth, while our sample size at the between-persons level was consistent with recommendations from prior research, simulation studies have demonstrated that a sample size of less than 20-40 units at level-1 (i.e., number of study days) can constrain statistical power (Bell et al., 2014). As such, future research should consider extending the present study by increasing the number of responses obtained from each participant, such as by increasing the duration of the study.

Sixth, the correlational study design made it impossible to determine whether there is a causal effect of self-compassion on the use of adaptive coping behaviours; thus, future research should employ experimental research designs to determine whether experimentally increasing an individual's level of self-compassion impacts their subsequent use of adaptive coping strategies. Finally, the present study prompted participants to retrospectively report on their level of self-compassion and use of adaptive coping behaviours at a single timepoint each day. While common in daily diary studies (Bolger et al., 2003), this form of assessment limits our ability to disentangle the temporal associations between self-compassion and coping *within* a given day, as well as increases the risk of participant responses being subject to recall bias (Bolger et al., 2003; Parkinson et al., 1995). Future research should address these limitations by collecting data multiple times throughout a given day using ecological momentary assessment.

Contributions and Implications

Findings from the present study suggest that there is merit in continuing to investigate whether day-to-day changes in self-compassion levels affect positive mental health in individuals with eating disorders. Taken at face value, the present results add further support to the theory that differences in self-compassion levels, both within a person and between people, are relevant to adaptive coping, a hallmark of positive mental health. Results specifically highlight that this link between self-compassion and adaptive coping is present in people with symptoms of clinical disorders – in this case, eating disorders – an area that had not yet been investigated. Given the well-established link between greater self-compassion and reduced eating pathology, the present results also suggest that future research should examine whether this association can be explained, at least in part, by the use of adaptive coping behaviours. Indeed, it is plausible that self-compassion reduces the need to engage in eating disorder symptoms indirectly by facilitating adaptive methods through which to manage distress, a theory that requires empirical investigation.

Although current treatments incorporate teachings to bolster problem-solving and social skills (Hagan & Walsh, 2021), the present findings, if corroborated by future work, might suggest that an individual's ability to employ these strategies in their daily life can vary based on their daily level of self-compassion. Therefore, interventions or strategies known to target and increase self-compassion, like compassion-focused therapy (CFT; Gilbert, 2009) and self-compassionate letter writing (Kelly & Waring, 2018), may not only help to reduce eating disorder pathology, as found in prior research (Turk & Waller, 2020), but also help individuals with symptoms of bulimia nervosa respond to challenges in their daily life more adaptively and enjoy greater mental health. Furthermore, treatment approaches that focus on the development of

self-compassion could be uniquely beneficial for individuals who are not ready or motivated to work directly on changing their eating disorder behaviours but who are interested in improving their quality of life. Indeed, past research found that adults who had not sought treatment for their eating disorder were motivated to engage with, and ended up adhering to, an intervention comprised of self-compassion practices (Kelly & Waring, 2018).

Conclusions

The present findings are the first to suggest that self-compassion may promote certain aspects of positive mental health in individuals with eating disorder symptoms. Findings suggest that, independent of how much they are bingeing and purging, being more self-compassionate than others with symptoms of bulimia nervosa, than their typical level, and/or than their preceding day's level, may promote the use of adaptive coping in individuals with symptoms of bulimia nervosa. While preliminary, the present findings highlight an understudied, yet potentially fruitful direction for future research, namely, exploring whether encouraging individuals with eating disorder symptoms to treat themselves with compassion can have beneficial consequences for their positive mental health.

Study 3: Self-compassion promotes social safeness in patients with eating disorders: A 12-week longitudinal study

The collective findings from Study 1 and Study 2 suggest that higher self-compassion levels on a given day, than the preceding day, and on average, can promote markers of positive mental health in the daily lives of individuals with different eating disorders, independent of their levels of eating pathology. Both Study 1 and Study 2 used community samples of individuals with eating disorders, and while all participants met diagnostic criteria for an eating disorder, it remains unknown whether similar associations would emerge in individuals with more severe eating disorders receiving higher levels of care. Furthermore, the preceding studies both employed brief, two-week, daily diary designs. Although these paradigms allow for the examination of temporal associations from one day to the next, the short duration of these study designs precludes the ability to establish whether self-compassion contributes to higher levels of positive mental health over extended periods of time and over the course of treatment. Finally, both prior studies were the first to document a positive association between self-compassion and markers of positive mental health in individuals with eating disorders. Accordingly, it is important to begin to determine the replicability of the observed associations.

In Study 3, I sought to address some of these remaining questions by examining the associations between self-compassion and social safeness over the course of approximately 12 weeks in a transdiagnostic eating disorder sample of individuals undergoing intensive hospital-based treatment for their eating disorder. Given that Study 1 demonstrated a positive association between self-compassion and social safeness at the between-persons level in a sample of women with anorexia nervosa, I was eager to determine the replicability of this finding in a larger, transdiagnostic sample of individuals with eating disorders. Extending the findings of Study 1,

Study 3 additionally aimed to explore the temporal dynamics between self-compassion and social safeness, testing whether periods of increased self-compassion over the course of treatment subsequently predicted greater social safeness. Thus, evidence that self-compassion could contribute to markers of positive mental health in individuals with severe eating disorders who are undergoing treatment could extend the findings from the preceding studies in this dissertation in theoretically and practically important ways.

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Introduction

Background

Social safeness is defined as the pleasant, warm, and soothing affective state that stems from feeling cared for, connected to, and validated by others (Gilbert et al., 2008). One's ability to experience feelings of social safeness is proposed to be shaped, at least in part, by one's early attachment experiences with their primary caregivers (Gilbert, 2009). Ample research suggests that, from birth, infants are highly attuned to non-verbal communication signals from caregivers, such as tone of voice or facial expressions (Cozolino, 2014; Siegel, 2020). These non-verbal cues of care are thought to serve an integral role in the organization of infants' physiological and affective systems (Cozolino, 2014; Siegel, 2020). Gilbert (2005) proposed that consistent exposure to nurturing and attentive caregivers in early life promotes the development of the soothing system—an affect regulatory system that stimulates feelings of contentment, safeness,

and calm in response to cues of warmth and affiliation. In contrast, individuals who are deprived of nurturing and affectionate experiences in their early environments have an underdeveloped soothing system, and thus may struggle to feel safe in their social world (Brophy et al., 2020). Importantly, early rearing experiences, coupled with the development of the soothing system, influence the ways in which individuals experience their social world into adulthood. Specifically, research suggests that children who are raised by nurturing caregivers go on to experience more social safeness as adults; that is, they develop the capacity to feel safe, supported in, and soothed by social interactions with others (Kelly & Dupasquier, 2016; Matos et al., 2013). Conversely, individuals who lack these nurturing experiences and/or experienced neglect, abuse, or criticism during rearing tend to find social interactions threatening and aversive (Müller et al., 2019). As a result, these latter individuals may anticipate negative evaluations from others (Asmari et al., 2022), display aggressive behaviours towards others (Lee & Hoaken, 2007) and/or withdraw from social relationships (Maxfield et al., 2023), all characteristics of feeling socially unsafe.

The ability to feel socially safe and soothed by the presence of others has been associated with a breadth of positive mental health outcomes and has been proposed to buffer against psychological vulnerability factors and psychopathological symptoms (Gilbert, 2010; Gilbert et al., 2009; Kelly et al., 2012). For instance, empirical findings reveal that higher levels of social safeness are positively associated with psychological well-being (Nguyen et al., 2022; Oliveira et al., 2022), life satisfaction (Maziriri et al., 2022; Satıcı et al., 2015), positive affect (Armstrong et al., 2021) and resilience (Chakroborty & Vohra, 2021). In contrast, individuals who report low levels of social safeness endorse greater psychosocial vulnerability factors and psychopathological symptoms, such as increased self-criticism, feelings of shame, depressive

symptoms, avoidant and paranoid traits, as well as low self-esteem (Kelly et al., 2012; Marta-Simões et al., 2017). Together, empirical research highlights the importance of social safeness to adaptive psychological functioning.

There is a compelling body of theoretical and empirical evidence suggesting that one's early-life experiences play an instrumental role in one's capacity to feel socially safe in one's interpersonal relationships. There is also mounting evidence to suggest that feeling socially safe has important implications for one's mental health and well-being and protects against psychological vulnerabilities and psychopathological symptoms. Together, these findings suggest favourable long-term social and emotional outcomes for individuals with positive rearing experiences; however, they also highlight a concerning trajectory for individuals with suboptimal caregiving experiences. Specifically, findings suggest that those who experienced poorer quality attachment relationships as children tend to experience low social safeness as adults, potentially leading to compromised mental health. Therefore, it is crucial to explore methods through which adults can enhance their feelings of social safeness that can be targeted through psychological intervention.

Promoting Social Safeness: The Role of Self-Compassion

Gilbert (2005) proposed that individuals can stimulate a soothed affective state in themselves through the practice of self-compassion. Self-compassion is defined as a motivation to engage with one's own suffering, coupled with the desire to prevent and alleviate suffering (Gilbert, 2009). Self-compassion enacts the same evolved social-motivational systems of caregiving and care-receiving that are at play in interpersonal interactions (Hermanto & Zuroff, 2016) and involves the following: (1) extending kindness and understanding towards oneself during times of distress, (2) adopting a curious and non-judgmental stance towards one's

negative emotions and perceived inadequacies, and (3) recognizing that suffering is part of the common human experience (Neff, 2003). While initially conceptualized as a trait-like variable, self-compassion levels have been demonstrated to vary within a person from one day to the next (Breines et al., 2013; Kelly & Stephen, 2016), and to change in sustained ways over short (Albertson et al., 2015; Smeets et al., 2014) and longer (Dundas et al., 2017; Sommers-Spijkerman et al., 2018) periods of time via compassion-based interventions. Self-compassion is thought to promote feelings of safeness and contentment through the activation of the same soothing system that enables distressed infants to be calmed by an attentive caregiver (Gilbert, 2005) and indeed psychological and physiological research supports this theory (Kirschner et al., 2019).

There are various ways in which the development of self-compassion might promote feelings of social safeness. When evoking a caring stance towards oneself, emotional memories of having been cared for by others are likely to be implicitly or explicitly activated (Gilbert, 2005; Marta-Simões et al., 2016), instilling a sense of feeling supported by and connected to others. It is also possible that an openness to receiving care that is required when practising self-compassion (Hermanto & Zuroff, 2016) orients self-compassionate people to be more attentive and receptive to cues of care in their interpersonal, not just intrapersonal, world. Furthermore, by promoting a soothed physiological state, which is known to downregulate the threat-detection system, individuals may dedicate fewer attentional resources to monitoring potential threats and have greater cognitive resources available to attend to, process, and receive indicators of care and acceptance from others (Gilbert, 2024; Gilbert & Procter, 2006; Taylor et al., 2010). Consistent with this proposition, individuals higher in self-compassion report greater social support seeking and receiving during times of distress (Dupasquier et al., 2018, 2020) and significantly less

avoidance of social situations (Gerber et al., 2015). Moreover, interventions that foster self-compassion significantly reduce the fear of receiving compassion from others (Kelly et al., 2016) as well as the fear and avoidance of social interactions more generally (Teale Sapach & Carleton, 2023).

While there is theoretical reason to believe that self-compassion might promote feelings of social safeness, to our knowledge, only two studies have directly investigated their interrelationship. Akin and Akin (2015) found that individuals with higher trait levels of self-compassion had higher levels of social safeness. Katan et al. (2025) demonstrated that women with anorexia nervosa who reported being more self-compassionate on average, on a given day, or than the previous day, also reported greater levels of social safeness. Although these findings provide initial support for the link between self-compassion and social safeness, it remains unknown whether, within a given person over time, changes in self-compassion can subsequently elicit changes in social safeness. Addressing this gap in the literature would yield stronger conclusions regarding the cultivation of self-compassion to promote feelings of social safeness, and generate much needed practical recommendations for individuals and clinical populations who struggle to feel socially safe.

The Present Study

The primary aim of this study was to examine whether increases in self-compassion levels within a given person give rise to increased feelings of social safeness. A longitudinal study design would uniquely enable the investigation of temporal dynamics between self-compassion and social safeness over an extended period of time. Although this treatment program did not center primarily around the development of self-compassion as in a compassion-focused therapy treatment, self-compassion was encouraged throughout the program's various

group therapy sessions. Furthermore, patient self-compassion and social safeness levels were found to increase over time throughout this treatment program in past research (Kelly & Carter, 2014). More broadly, individuals with eating disorders are known for their low levels of social safeness (Isaksson et al., 2022), and these socio-emotional deficits contribute to their disordered eating symptoms (Ferreira et al., 2018; Pinto et al., 2017). Thus, this population and treatment context provided a great opportunity within which to examine increased self-compassion as a facilitator of social safeness.

We first sought to test the hypothesis that, following periods of increased self-compassion, individuals would report higher levels of social safeness (H1). Given evidence that social safeness might give rise to self-compassion (Kelly & Dupasquier, 2016), we also sought to explore the bidirectionality of these associations by examining whether periods of increased social safeness would be associated with subsequently higher levels of self-compassion. Our second aim was to examine the associations between self-compassion and social safeness at the between-persons or ‘trait’ level. In line with the findings by Akin and Akin (2015) and Katan et al. (2025), we predicted that individuals with higher average levels of self-compassion over the course of eating disorder treatment would also report greater average levels of social safeness (H2). Given that eating pathology has been negatively associated with social safeness (Isaksson et al., 2022) and with interpersonal functioning more broadly (Hartmann et al., 2009), and that social safeness and self-compassion levels differ across eating disorder diagnostic subtypes (e.g., anorexia nervosa, bulimia nervosa; Kelly & Carter, 2014), we controlled for eating disorder symptom severity and diagnosis in all analyses. Once again, we aimed to explore the bidirectionality of the cross-sectional associations by also examining whether higher average

levels of social safeness over the course of treatment would be associated with greater self-compassion.

Method

Study data

Given the time, resources, and participant burden associated with collecting clinical data, the present study utilized participant data that were collected between 2010 and 2012 as part of a larger longitudinal study on the role of self-compassion in group-based eating disorders treatment (Kelly & Carter, 2014). However, the research questions and hypotheses tested in the present paper are unique and have not been previously examined.

Participants

Recruitment

This study was approved by the University Health Network Research Ethics Board (REB# 10-0383-A). Participants were recruited from an urban interdisciplinary hospital-based treatment program for eating disorders offering group-based inpatient and day hospital treatment. All patients were assessed for an eating disorder via a semi-structured interview based on the then-used DSM-IV-TR with a registered clinical psychologist and received an eating disorder diagnosis prior to admission to the treatment program. In their pre-admission orientation session, patients were asked whether they would be willing to be contacted by a member of the research team to learn more about and potentially participate in a study exploring psychosocial functioning and eating disorders. Those who were willing were contacted by the researcher who met with them briefly before their treatment began to provide an overview of the study and obtain consent.

Sample Characteristics

The final sample was comprised of 86 individuals, approximately 92% of whom identified as female. The sample had a mean age of 28.15 ($SD = 9.76$; range = 17-57) and mean BMI of 20.81 kg/m² ($SD = 5.61$; range = 13-44). The diagnostic composition of the sample, based on the then-used DSM-IV-TR, was: 26.7% anorexia nervosa – restricting type; 18.6% anorexia nervosa – binge/purge type; 29.1% bulimia nervosa; and 25.6% eating disorder not otherwise specified. Approximately 28.9% of the sample was admitted to the inpatient program and 71.1% were admitted to the day hospital program.

Procedures and Materials

All participants in the present study actively engaged in either group-based inpatient or day hospital treatment services. Over the course of the 12 weeks, individuals participated in group psychotherapy sessions and behavioural interventions (e.g., adhering to a meal plan, eating meals under supervision) from a cognitive-behavioural model. The focus was medical stabilization, including nutritional rehabilitation and weight restoration for individuals of low weight, and symptom amelioration, such as eradicating binge eating and inappropriate compensatory behaviours. Patients also participated in other manualized groups, such as dialectical behaviour therapy, anxiety management, and interpersonal therapy and sexuality. Although there were no compassion-specific groups or interventions integrated into treatment at the time of the study, cultivating compassion for oneself was indirectly encouraged throughout participation in the other treatment groups.

As part of a larger study, participants were asked to complete questionnaires at approximately five separate time points over the course of their study participation: once during their initial pre-admission session, and then again via an online survey link roughly every three

weeks for a total of 12 weeks of treatment (i.e., at approximately weeks 3, 6, 9, and 12). To minimize missing data and participant dropout, flexibility was provided to participants around these three-week timeframes with the exact timing of their survey completions modeled in the data.

Eating Disorder Symptoms

Eating disorder symptomology was assessed using the 36-item Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). The EDE-Q is comprised of four subscales (i.e., Dietary Restraint, Shape Concern, Weight Concern, and Eating Concern) that are aimed at assessing the nature, frequency, and severity of eating disorder symptomology. Participant responses across these subscales were averaged to generate a Global score of eating disorder symptom severity ranging from 0 to 6, with higher scores suggesting greater levels of eating disorder psychopathology. This measure demonstrated an excellent degree of internal consistency at baseline (Cronbach's $\alpha = .92$).

Self-compassion

Self-compassion was assessed at each time point using the 12-item Self-Compassion Scale-Short Form (SCS-SF; Raes et al., 2011). Using a five-point scale, ranging from 1 (*not at all*) to 5 (*frequently*), participants indicated the extent to which they typically act in various compassionate and uncompassionate ways toward themselves during difficult times (e.g., "When I'm going through a very hard time, I give myself the caring and tenderness I need."). The SCS-SF demonstrated a high degree of internal consistency at baseline (Cronbach's $\alpha = .86$).

Social Safeness

Social safeness was assessed using the 11-item Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009). Participants used a five-point scale, ranging from 1 (*very slightly or*

not at all) to 5 (*extremely*), to indicate the extent to which they experienced their social relationships to be soothing, warm, and reassuring (e.g., “I feel easily soothed by those around me”), as well as how connected they feel to others (i.e., “I feel connected to others”). The SSPS had an excellent degree of internal consistency at baseline (Cronbach’s $\alpha = .94$).

Analytic Approach

Multilevel modelling using maximum likelihood estimates were conducted for preliminary analyses using PROC MIXED in SAS 9.4. Maximum likelihood estimation handles missing data by utilizing all available participant data at both the within-person and between-persons level to estimate the model parameters, thus enabling the inclusion of all participant data (Snijders & Bosker, 2012). Given that participants were undergoing psychological treatment at the time of their study participation, we anticipated that scores on self-compassion (i.e., predictor) and eating pathology (i.e., covariate) would change linearly over time. Because we were not interested in examining linear changes in these variables as a result of time spent in treatment, but rather in examining the within-person coupling of self-compassion and social safeness over time, we produced detrended within-person scores to remove the effect of time from each of the predictors (see Curran & Bauer, 2011).

First, we rescaled our time variable by subtracting each time value from the grand mean of time (i.e., 5.15 weeks). Second, ordinary least squares (OLS) regressions were conducted for each participant, where time was entered as the predictor variable and self-compassion, eating pathology, and social safeness were entered as separate criterion variables. The intercepts from these regression analyses were obtained and grand-mean centered to provide between-persons (i.e., level-2) scores on self-compassion, eating pathology, and social safeness for each participant. These level-2 scores, also referred to as “average” levels in the present study,

represent participants predicted scores on each variable (e.g., social safeness) at the mean of time (i.e., at 5.15 weeks). Third, we computed detrended within-person (i.e., level-1) variables at time ' t ' by using the residuals that were obtained from the OLS regression analyses. Fourth, we computed lagged variables (i.e., the level of a given variable at $t-1$) for each criterion variable, allowing us to control for scores on the criterion variable at the previous time point. Finally, we computed two sets of difference scores for each of our predictor variables (i.e., self-compassion and eating pathology) to determine the difference in an individual's scores on a given variable between t and $t-1$, and between t and $t-2$. Given that participants generally completed the questionnaire measures every three weeks, these difference scores represent differences in an individual's scores on a given variable over the course of approximately 3 weeks (i.e., difference between t and $t-1$) and 6 weeks (i.e., difference between t and $t-2$) of treatment.

Central Analyses

The criterion variable was participants' raw scores across all available time points on social safeness. Two multilevel models were conducted with social safeness as the criterion variable, each of which included a random effect of time and eating disorder diagnosis as a fixed effect. The self-compassion difference score variables (i.e., Difference Self-Compassion T1 and Difference Self-Compassion T2) were our primary predictors and were entered as level-1 fixed effects in two separate models. Two eating pathology difference scores were computed in a similar manner and entered as covariates to the respective model. Lagged variables were computed for the criterion variable (i.e., lagged social safeness) and were entered as a covariate fixed effect in the respective model to control for a participant's level of the criterion variable at the previous time point (e.g., social safeness at $t-1$), when predicting their level at the subsequent

time point (e.g., social safeness at t). Self-compassion and eating pathology were also entered as between-persons fixed effects in all models, with the latter representing a covariate.

In order to examine whether the associations between self-compassion and social safeness may be bidirectional, additional multilevel models were conducted in which raw self-compassion scores across all available time points was entered as the dependent variable, and social safeness scores (i.e., the previously conceptualized criterion variable) was entered as both a level-1 predictor (i.e., difference from the preceding one or two time points) and level-2 predictor (i.e., mean social safeness score across time points).

Results

Preliminary Analyses

Participants completed an average of 3 surveys ($SD = 1.77$) over the 12-week study period, with participants missing between one and four surveys over the 12 weeks. Approximately 57% of the sample were observed to complete three or more surveys throughout their study participation. Aggregating participants' self-compassion and social safeness scores across all available surveys, after removing the effect of time, revealed a mean self-compassion score of 2.23 ($SD = 0.77$) and a mean social safeness score of 1.52 ($SD = 1.07$). Intraclass correlations revealed that approximately 33% and 18% of the variability in self-compassion and social safeness scores, respectively, occurs at the within-person level. See Table 7 for the descriptive statistics, as well as the intraclass, Pearson, and repeated-measures correlations for all study variables.

Table 7*Descriptive statistics and between- and within-person correlations between study variables*

	<i>M</i>	<i>SD</i>	ICC	1	2	3
1. Self-Compassion	2.23	0.77	.67	-	0.56***	-0.55***
2. Social Safeness	1.52	1.07	.82	0.39***	-	-0.42***
3. Eating Pathology	3.23	1.62	.69	-0.31***	-0.32***	-

Note. Means and standard deviations for all variables were based on mean levels across the 12-week study period after removing the effect of time. Between-persons correlations are above the diagonal and within-person correlations are below.

*** $p < .001$

Central Analyses

Consistent with Hypothesis 1, results revealed that individuals reported a significantly greater sense of social safeness following periods of increased self-compassion from the preceding one ($t -1$; see Table 8, Model 1) and two time points ($t -2$; see Table 8, Model 2). These within-person effects were small (Cohen, 1992) and emerged after controlling for participants' preceding levels of social safeness and changes in their eating pathology. At the between-persons level, findings were consistent with Hypothesis 2 and revealed that after controlling for eating disorder diagnosis and average levels of eating pathology, there was a medium-to-large effect of self-compassion on social safeness. Specifically, individuals who reported higher average levels of self-compassion over the course of eating disorder treatment also reported greater levels of social safeness across time points.

Exploratory Analyses

We then examined social safeness as a predictor of self-compassion to determine whether there was a bidirectional relationship between these variables. At the within-person level, results revealed that after controlling for changes in eating pathology, increases in social safeness from two preceding time points ($t -2$; see Table 9, Model 2) but not one preceding time point ($t -1$; see

Table 9, Model 1) were associated with greater self-compassion. The effect size for this association was small. At the between-persons level, there was a large effect of social safeness on self-compassion. Specifically, higher average levels of social safeness over the course of treatment were associated with higher levels of self-compassion across time points, independent of individuals' average level of eating pathology and eating disorder diagnosis.

Table 8

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects predicting social safeness

Fixed effects	B	SE	df	95% CI	R^2_β
Model 1					
Intercept	0.84	0.60	74	[-0.35, 2.03]	
Time	0.02*	0.01	182	[0.003, 0.04]	.03
Diagnosis					.03
AN-R	0.04	0.25	74	[-0.46, 0.53]	
AN-B/P	-0.33	0.27	74	[-0.87, 0.20]	
BN	-0.06	0.24	74	[-0.54, 0.42]	
EDNOS	0.00	-	-	-	
Within-person Predictors					
Lag Social Safeness T1	-0.31**	0.09	182	[-0.49, -0.13]	.06
Difference Eating Pathology T1	-0.03	0.05	182	[-0.13, 0.07]	<.01
Difference Self-Compassion T1	0.16**	0.06	182	[0.05, 0.28]	.04
Between-Persons Predictors					
Mean Eating Pathology	-0.13	0.07	74	[-0.27, 0.02]	.04
Mean Self-Compassion	0.53**	0.15	74	[0.22, 0.83]	.14
Model 2					
Intercept	0.91	0.60	74	[-0.28, 2.10]	
Time	0.03**	0.01	180	[0.01, 0.04]	.05
Diagnosis					.04
AN-R	0.02	0.25	74	[-0.47, 0.52]	
AN-B/P	-0.37	0.27	74	[-0.91, 0.17]	
BN	-0.10	0.24	74	[-0.59, 0.38]	
EDNOS	0.00	-	-	-	
Within-person Predictors					
Lag Social Safeness T2	-0.20*	0.10	180	[-0.40, -0.01]	.02
Difference Eating Pathology T2	-0.13*	0.05	180	[-0.23, -0.03]	.03
Difference Self-Compassion T2	0.18*	0.07	180	[0.03, 0.32]	.03
Between-Persons Predictors					
Mean Eating Pathology	-0.15*	0.07	74	[-0.29, 0.00]	.05
Mean Self-Compassion	0.52**	0.15	74	[0.21, 0.83]	.13

Note. “Difference” refers to the difference in scores on a given variable between t and $t-1$ (T1) or t and $t-2$ (T2). Lag social safeness refers to social safeness scores at one preceding ($t-1$; T1) or - two preceding ($t-2$; T2) time points. AN-R = anorexia nervosa - restricting type; AN-B/P = anorexia nervosa - binge/purge type; BN = bulimia nervosa; EDNOS = eating disorder not otherwise specified.

* $p < .05$; ** $p < .01$.

Table 9

Unstandardized regression coefficients (B), standard errors, and effect sizes (R^2_β) for fixed effects predicting self-compassion

Fixed effects	B	SE	df	95% CI	R^2_β
Model 1					
Intercept	2.12***	0.20	74	[1.72, 2.53]	
Time	0.02*	0.01	182	[0.003, 0.04]	.03
Diagnosis					.02
AN-R	-0.13	0.13	74	[-0.39, 0.14]	
AN-B/P	-0.17	0.15	74	[-0.47, 0.12]	
BN	-0.05	0.13	74	[-0.32, 0.22]	
EDNOS	0.00	-	-	-	
Within-person Predictors					
Lag Self-Compassion T1	-0.45***	0.09	182	[-0.64, -0.27]	.12
Difference Eating Pathology T1	0.01	0.04	182	[-0.08, 0.09]	<.0
Difference Social Safeness T1	0.06	0.05	182	[-0.03, 0.16]	.01
Between-Persons Predictors					
Mean Eating Pathology	-0.16***	0.03	74	[-0.23, -0.09]	.21
Mean Social Safeness	0.28***	0.05	74	[0.18, 0.39]	.29
Model 2					
Intercept	2.07***	0.20	74	[1.67, 2.47]	
Time	0.02*	0.01	180	[0.004, 0.04]	.03
Diagnosis					.03
AN-R	-0.16	0.13	74	[-0.42, 0.10]	
AN-B/P	-0.17	0.14	74	[-0.45, 0.12]	
BN	-0.04	0.13	74	[-0.30, 0.22]	
EDNOS	0.00	-	-	-	
Within-person Predictors					
Lag Self-Compassion T2	0.03	0.10	180	[-0.17, 0.24]	<.0
Difference Eating Pathology T2	0.04	0.05	180	[-0.06, 0.14]	<.0
Difference Social Safeness T2	0.21***	0.06	180	[0.10, 0.32]	.07
Between-Persons Predictors					
Mean Eating Pathology	-0.15***	0.03	74	[-0.22, -0.08]	.21
Mean Social Safeness	0.30***	0.05	74	[0.20, 0.40]	.32

Note. “Difference” refers to the difference in scores on a given variable between t and $t-1$ (T1) or t and $t-2$ (T2). Lag Self-Compassion refers to self-compassion scores at one preceding ($t-1$; T1) or two preceding ($t-2$; T2) time points. AN-R = anorexia nervosa – restricting type; AN-B/P = anorexia nervosa- binge/purge type; BN = bulimia nervosa; EDNOS = eating disorder not otherwise specified.

* $p < .05$; *** $p < .001$.

Discussion

The primary goal of the present study was to explore whether an individual's level of social safeness, an affective experience with roots in early attachment relationships, is amenable to change in adulthood through changes in self-compassion. We examined this research question in people with eating disorders, a clinical population notorious for low levels of social safeness, and for whom changes in self-compassion would be likely due to active engagement in psychological treatment. Consistent with our first hypothesis, changes in an individual's level of self-compassion over roughly three- and six-week periods in treatment were related to their subsequent levels of social safeness. That is, individuals reported a greater sense of warmth, security, and belonging in their social relationships following periods in which they treated themselves with increasing amounts of self-compassion. We also found that increases in social safeness over roughly six but not three weeks of treatment were associated with higher subsequent levels of self-compassion. Consistent with our second hypothesis, individuals who endorsed higher mean levels of self-compassion over the course of eating disorder treatment reported greater levels of social safeness throughout treatment, and vice versa. Therefore, self-compassion and social safeness appeared to influence one another reciprocally both at the within-person and between-persons levels.

It is noteworthy that increases in self-compassion were not only temporally associated with higher levels of social safeness, but that the magnitude of these associations was comparable regardless of whether changes in self-compassion occurred over shorter (e.g., roughly three weeks) or longer (e.g., roughly six weeks) periods of time throughout treatment. While the capacity to feel socially safe is developed in early life and predicts the ways in which individuals experience their social worlds into adulthood (Kelly & Dupasquier, 2016; Matos et

al., 2013), the present findings suggest that the development of increased self-compassion as an adult, even over relatively short periods of time, can alter one's affective experience in social relationships. It is also worth highlighting that the present findings emerged even when controlling for eating pathology, thus suggesting that, even for individuals with active eating disorders who generally struggle to feel safe, soothed, and accepted in their social world (Pinto et al., 2017), developing a more compassionate stance toward themselves may lead them to perceive and experience their social relationships as more affiliative and nurturing.

Contributions and implications

To our knowledge, the present study is the first to suggest that increases in self-compassion can promote greater feelings of social safeness in a clinical population known for their chronically low levels of social safeness. Situated in a literature base that primarily conceptualizes social safeness as a stable, trait-like personality variable, the present study offers a number of novel clinical and empirical implications for addressing challenges with social safeness. First, the fact that social safeness appeared amenable to change through changes in self-compassion offers a hopeful message for individuals who experienced limited nurturance in their rearing relationships, and as a result, grew to perceive their social world as relatively unsafe and even threatening. Rather than being destined to experience chronic impairments in mental health and well-being, as implied by the extant literature, the present study suggests that individuals can disrupt the perpetuation of these challenges through changing the way they relate to themselves. It might be that, as suggested, treating oneself with compassion activates the soothing system, which in turn downregulates the feelings of threat that are common amongst individuals with low social safeness in interpersonal contexts (Gilbert, 2024). As a result, self-compassionate

individuals may be more open and receptive to indicators of acceptance, understanding, and care from others in interpersonal contexts.

Future research should examine the best ways to engage individuals with low levels of social safeness in practices and/or interventions that foster self-compassion. For example, self-guided interventions such as self-compassionate letter writing (Kelly & Waring, 2018) and mindfulness meditation (Boellinghaus et al., 2012) may be more appealing to individuals prone to low levels of social safeness, who may avoid seeking support from a therapist due to fears of compassion (Gilbert et al., 2011; Merritt & Purdon, 2021) or discomfort in close social relationships (Gilbert, 2009). Conversely, it could be that for some individuals, the increased self-compassion that arises in response to a highly empathic, compassionate therapist (Brill & Nahmani, 2017; Germer, 2023) has a greater impact on social safeness than practices engaged in independently. It would be fruitful to examine which self-compassion interventions have the greatest downstream effects on feelings of social safeness and whether effects vary based on features of the person.

While improvements in social safeness could have implications for the ways in which individuals engage with others in day-to-day life, given that the present study took place in an eating disorder treatment setting, it is interesting to consider the potential implications for psychological treatment. The alliance individuals form with a therapist and their peers in a group treatment context is considered to be a critical mechanism of change in psychotherapy (Baier et al., 2020; Burlingame et al., 2018). When individuals are able to feel safe, understood, and supported by others, they are more willing to discuss sensitive topics (Greenberg, 2014), actively engage in therapeutic interventions (Matos et al., 2022) and recommendations (Howgego et al., 2003), and be open to receiving emotional validation and compassion (Matos et al., 2022).

Problematically, individuals with low social safeness may find it difficult to trust others (Matos et al., 2017), fear rejection or judgment from others (Gilbert, 2022), and interpret neutral or positive interactions as threatening (Gilbert, 2019; Gilbert, 2024). Together, these challenges may lead individuals to withhold vulnerable information or avoid expressing their emotions, thereby creating barriers to forming genuine and trusting connections with their therapist or fellow group members, in turn hindering their ability to benefit from treatment. Future research would benefit from exploring whether bolstering levels of social safeness via compassion-based interventions early in treatment could enhance treatment engagement, therapeutic alliances, and as a result, contribute to more favourable therapeutic outcomes.

Strengths, Limitations, and Future Directions

The present study has several strengths, including the longitudinal study design, sample size, and use of a clinical population. Nonetheless, there are limitations that suggest directions for future research. First, the present study was conducted in a sample of individuals with moderate to severe eating disorders who were currently undergoing intensive eating disorder treatment. While clinically relevant given the deficits in social safeness experienced by this population, the specificity of the sample limits the generalizability of the current findings. Future research should explore the generalizability of the present findings across both clinical and non-clinical populations. Second, while the current study established associations between periods of increased self-compassion and social safeness, the correlational study design limits our ability to establish causality. Future research would benefit from experimentally inducing self-compassion, such as through brief compassion-focused interventions, and measuring individuals' subsequent levels of social safeness. Third, the use of secondary data limited our capacity to explore the potential mechanisms through which increases in self-compassion promote higher levels of

social safeness, and vice versa. Future research would benefit from examining the ways through which increasing one's self-compassion can enhance feelings of social safeness. Finally, while the sample size provided sufficient power for comparisons at the between-persons level (Maas & Hox, 2005), as is common in multilevel study designs with human participants (Bell et al., 2014), our statistical power was constrained at the within-person level. Accordingly, future research should consider modifying the present study design to increase the number of responses provided by each participant, such as by increasing the frequency of the assessments or extending the duration of the study.

Conclusions

Social safeness is considered a key predictor of positive mental health and protects against psychopathology; however, little is known about ways to promote feelings of social safeness among individuals who tend to perceive their social world as threatening and aversive. The present findings are among the first to suggest that increases in self-compassion may enhance feelings of social safeness among individuals with chronically low levels of social safeness, such as those in the present study. Together, these findings offer potentially novel directions for bolstering levels of social safeness through clinical interventions, and for empirically understanding factors that promote social safeness in clinical and non-clinical populations.

General Discussion

Within the field of eating disorders, there have been extensive efforts made to identify factors that contribute to the development, maintenance, and remission of the behavioural symptoms of these disorders. However, there is a paucity of research aimed at elucidating factors that might additionally promote positive mental health and well-being in this population. The goal of the present dissertation was to examine one possible intrapersonal factor that might contribute to markers of positive mental health in individuals with eating disorders: self-compassion. Using three longitudinal studies, spanning different eating disorder populations, contexts, and durations, this dissertation aimed to examine the unique associations between self-compassion and markers of positive mental health that are relevant to individuals with eating disorders, namely, positive affect (Study 1), use of adaptive coping behaviours (Study 2), and social safeness (Studies 1 and 3). In line with advancements in the self-compassion literature demonstrating that self-compassion levels can fluctuate between people and within a given person (e.g., Breines et al., 2014; Kelly & Stephen, 2016), this dissertation sought to test whether trait self-compassion levels, as well as self-compassion levels on a given day or than a previous day, or point in time, are associated with select markers of positive mental health.

In light of the chronic and widespread psychosocial impairments individuals with eating disorders experience in daily life, it is crucial to elucidate factors that might not only reduce eating pathology but also serve to promote positive mental health. The findings from this body of work enrich our theoretical and practical understanding of how self-compassion might benefit individuals with eating disorders. More generally, the present findings underscore the importance of broadening the field of clinical research and intervention to consider and increasingly prioritize outcomes related to positive mental health and well-being.

Summary of Findings

Self-Compassion Promotes Positive Mental Health in Daily Life

The overarching goals of Study 1 and Study 2 were to explore the influence of self-compassion levels on various markers of positive mental health in individuals with eating disorders, within the context of daily life, using two-week daily diary paradigms. This ecologically valid study design (Schneider & Stone, 2016) allowed for the examination of the associations between self-compassion and indicators of positive mental health from three different perspectives: cross-sectionally across participants (i.e., at the ‘trait’ level), within a given individual on a specific day (i.e., at the ‘daily’ level), and within a given individual from one day to the next. Study 1 examined the associations between self-compassion and two markers of positive mental health, positive affect and social safeness, in a community sample of women with anorexia nervosa who were not seeking treatment for their eating disorder at the time of their participation. In a community sample of individuals with bulimia nervosa, Study 2 tested the links between self-compassion and different forms of adaptive coping that involve directly addressing stressors (i.e., through problem-solving or seeking and receiving instrumental support) and trying to alleviate distressing emotions (i.e., through seeking and receiving emotion support).

Despite the use of different outcome variables and eating disorder samples, similar findings emerged regarding the potential contribution of self-compassion to indicators of positive mental health across both studies. At the between-persons or trait level, findings revealed that individuals with anorexia nervosa and bulimia nervosa who were generally more self-compassionate than others over the two-week study period reported experiencing more positive mental health, regardless of their level of eating pathology. Specifically, Study 1 demonstrated

that women with anorexia nervosa who reported higher levels of self-compassion than others reported greater positive affect and social safeness. Study 2 found that women with bulimia nervosa who were generally more self-compassionate than others tended to seek and receive more emotional and instrumental social support when faced with challenges; however, participants' average or trait self-compassion levels were unrelated to the use of problem-solving strategies. While yet to be examined in the context of clinical populations, these findings are largely consistent with cross-sectional findings from non-clinical samples demonstrating that individuals who report higher levels of trait self-compassion endorse greater positive mental health and well-being, including positive affect (Zessin et al., 2015), social safeness (Akin & Akin, 2015), and use of adaptive coping behaviours (Ewert et al., 2021).

At the within-person or daily level, findings from Study 1 and Study 2 were the first to demonstrate that the extent to which individuals treated themselves with compassion on a given day contributed to positive mental health, even when controlling for daily levels of eating pathology. Results from Study 1 revealed that on days that women with anorexia nervosa treated themselves more self-compassionately than was typical for them, they experienced more positive mood states and a greater sense of safeness, comfort, and warmth in their social relationships. Similarly, Study 2 found that days marked by higher-than-usual self-compassion were associated with greater use of problem-focused coping strategies, such as problem-solving and seeking and receiving instrumental support, and emotion-focused coping strategies, such as seeking and receiving emotional support, in women with bulimia nervosa. Further, across both studies, individuals with anorexia nervosa and bulimia nervosa generally reported higher levels of positive affect and social safeness, as well as use of adaptive coping behaviours, respectively, when they treated themselves with more self-compassion than the previous day. Although the

present studies are the first to examine the links between daily self-compassion and markers of positive mental health in individuals with eating disorders, these findings are largely consistent with daily diary studies conducted in non-clinical samples, which find that days of higher self-compassion are associated with higher scores on self-report measures of well-being (Mey et al., 2023) and coping (Dupasquier et al., 2020) in daily life.

Together, findings from Study 1 and Study 2 provided support for the notion that self-compassion can contribute to positive mental health in individuals with eating disorders, independent of their eating disorder symptom severity. However, the use of a community sample of individuals with eating disorders, coupled with the short duration of the study designs (i.e., two weeks), precludes the ability to establish whether similar associations would emerge in individuals with more severe eating disorders or over extended periods of time. Study 3 aimed to address some of these limitations.

Self-Compassion Promotes Positive Mental Health during Eating Disorders Treatment

Using a 12-week longitudinal study design, Study 3 examined the associations between self-compassion and social safeness in a transdiagnostic sample of individuals with eating disorders participating in an intensive group treatment program. At the between-persons level, findings revealed that individuals with eating disorders who reported higher average levels of self-compassion over the course of treatment reported greater feelings of social safeness, even when controlling for their eating disorder symptoms. Despite the difference in sample and study design, these between-persons findings were consistent with those in Study 1, suggesting that average levels of self-compassion influence the extent to which individuals perceive their social relationships to be comforting, soothing, and warm across eating disorder populations. Of particular interest in Study 3 was to examine the temporal dynamics between self-compassion

and social safeness over the course of eating disorder treatment. Consistent with hypotheses, results revealed that increases in an individual's level of self-compassion over approximately three- and six-week periods in treatment were associated with subsequently higher levels of social safeness. Exploratory analyses examining the reciprocal associations found that increases in social safeness over roughly six but not three weeks of treatment were linked to higher levels of self-compassion, suggesting that the associations between these variables may be, at least to some extent, bidirectional in nature. In sum, findings from Study 3 suggest that higher average levels of self-compassion over the course of eating disorder treatment, as well as periods of time marked by higher-than-usual self-compassion, are associated with a greater sense of social safeness among individuals with different eating disorder diagnoses.

Theoretical Contributions and Empirical Future Directions

The dual continuum of mental health posits that mental health and mental illness are not mutually exclusive states, and thus, individuals actively experiencing mental illness, such as those with eating disorders, can theoretically still enjoy elements of positive mental health (Keyes, 2005). Although there has been empirical support for the dual-continuum model across clinical populations (e.g., Keyes, 2002; Seow et al., 2016), there have been comparatively fewer investigations demonstrating that individuals with eating disorders, a population known for its intra- and interpersonal psychosocial impairments (e.g., Ball & Lee, 2000; Hartmann et al., 2009; Kitsantas et al., 2003), can experience various facets of positive mental health. De Vos and colleagues (2018, 2021) were the first to demonstrate that, cross-sectionally, individuals with eating disorders could experience moderate to high levels of well-being despite the severity of their disorders. The present dissertation builds on these pioneering findings by being the first to demonstrate that, across all three studies, individuals with different types of eating disorders and

levels of eating disorder severity can experience fluctuations in the extent to which they experience different markers of positive mental health, both in daily life and over time. Specifically, the intraclass correlation coefficients observed across different measures of positive mental health in the current studies ranged from .37 (Problem-Solving; Study 2) to .90 (Social Safeness; Study 1), suggesting that between roughly 10% and 63% of the variability in outcomes related to positive mental health occur at the within-person level. While replication and future research is needed, the present series of findings provide additional support for the dual continuum of mental health in individuals with eating disorders.

The current work is consistent with calls in the literature to place greater emphasis on factors related to positive mental health and well-being in individuals with eating disorders (de Vos et al., 2018; Mitchison et al., 2016). This dissertation focused on examining whether individuals with eating disorders experienced fluctuations in their levels of social safeness, positive affect, and use of adaptive coping behaviours, as a function of the way they relate to themselves. While this is an important first step in understanding factors that influence positive mental health in individuals with eating disorders, Keyes' (2005) model of mental health proposes additional facets that are relevant to understanding individuals' overall mental health and well-being, such as the extent to which individuals perceive their activities as contributing to and being valued by society or one's ability to adopt a positive and accepting attitude toward aspects of their past and present self. Accordingly, future research examining the influence of self-compassion on positive mental health in people with eating disorders would benefit from incorporating additional measures of positive mental health that assess these domains, particularly in the context of daily life. Future research might also benefit from extending the current investigation by examining whether self-compassion can also enhance more objective

markers of positive mental health, such as the frequency and nature of daily social interactions or the specific types of coping behaviours used to manage challenging environmental demands. Together, these investigations would more holistically capture the extent to which individuals with eating disorders are capable of experiencing positive mental health in their day-to-day life, as well as provide novel insights into the associations between self-compassion and markers of positive mental health.

Perhaps the most exciting theoretical contributions of this dissertation stem from the elucidated role of self-compassion in promoting positive mental health in individuals with eating disorders. Gilbert (2005) and Neff's (2003a) theories of self-compassion both implicitly propose that self-compassion may play a dual role in preventing and alleviating symptoms of mental illness, such as eating disorder symptoms, as well as promoting overall positive mental health and well-being. Theoretical and empirical research suggests that approaching one's own suffering with a balanced, caring, and understanding perspective triggers a cascade of psychological, emotional, physiological, and behavioural responses that together, reduce distress and enhance well-being (Gilbert, 2014). Specifically, these responses lead to the downregulation of threat-based and drive-based emotions, increase feelings of being soothed and comforted, and, consequently, enable individuals to identify and engage in behaviors that are helpful, rather than harmful, to their overall mental health (Gilbert, 2005; Gilbert, 2014). To date, only partial support for this theory has been provided in the context of eating disorder populations. Specifically, the existing literature in these populations has largely focused on the links between self-compassion and reduced harmful eating behaviours, revealing that self-compassion can mitigate eating pathology across eating disorder samples (e.g., de Carvalho Barreto et al., 2018; Katan & Kelly, 2021; Kelly & Tasca, 2016; Turk & Waller, 2020).

To my knowledge, findings from this dissertation are the first to suggest that self-compassion may additionally contribute to markers of positive mental health in individuals with eating disorders. This is consistent with Gilbert (2005) and Neff's (2003a) theory that self-compassion is a key component in fostering positive mental health and well-being, as well as with the empirical literature documenting robust associations between self-compassion and markers of positive mental health in non-clinical samples (Zessin et al., 2015). The fact that self-compassion was observed to influence different facets of positive mental health in individuals with eating disorders might offer important insights into why existing interventions aimed at directly promoting positive mental health in these populations are minimally effective at achieving their desired outcomes. Specifically, positive psychology interventions aimed at augmenting positive emotions, cognitions, and behaviours in individuals with eating disorders fail to increase positive emotions and thinking styles (Enrique et al., 2018; Enrique et al., 2020). In parallel, extant interventions that primarily target eating pathology also appear to fall short at enhancing individuals' quality of life and well-being to normative levels, even once symptoms are remitted (e.g., Ackard et al., 2014; Tomba et al., 2017; Tomba et al., 2019). However, findings suggest that an approach to self-relating that involves directly engaging with and validating one's distress from a compassionate orientation, rather than evading it by trying to think or behave more positively, appears helpful in enhancing positive mental health in eating disorder samples. Taken together, the limited effectiveness of existing interventions points to a potential gap in current treatment approaches. The findings of this dissertation suggest that further research into the role of self-compassion could offer a promising direction for addressing this gap and potentially improving outcomes related to mental health and well-being in individuals with eating disorders.

While not examined in this dissertation, it is interesting to speculate on the mechanisms through which self-compassion promotes the increases in positive mental health observed among individuals with eating disorders, both at the within-person and between-persons levels. Drawing on Gilbert's (2005) theory of self-compassion, one would expect that the activation of the soothing system, which occurs when individuals approach their distress in a compassionate manner, leads to instantaneous feelings of calm, relaxation, and contentment. Indeed, relating to oneself in a self-compassionate manner is known to activate similar physiological processes to that observed in instances where one receives care from another person, such as the activation of the parasympathetic nervous system and release of hormones associated with soothing affective states (e.g., oxytocin; Gilbert, 2014; Rockliff et al., 2008). By reducing the intensity of threatening emotions and facilitating positive affective states, the activation of the soothing system may not only alleviate distress but also promote pleasurable mood states (Gilbert, 2009; Gilbert, 2010; Gilbert, 2015). Furthermore, it is possible that by alleviating immediate feelings of distress, individuals may be better equipped to identify and address their emotional needs in ways that are conducive to their overall well-being (Koole et al., 2013). For instance, this may involve offering themselves words of encouragement, engaging in self-care behaviours, or accessing social support from compassionate others, all of which could contribute to the observed within-person improvements in markers of positive mental health. Consistent with Gilbert's theory, one might further predict that the frequent activation of the soothing system through repeated efforts to treat oneself with compassion may gradually result in a more balanced, adaptive activation of the threat and drive emotion systems over time (Gilbert, 2005, pp. 293-295). By reducing the chronic overactivation of the threat system that is thought to occur in eating disorder populations due to the high degree of shame individuals experience, as well as

regulating the drive system, which is thought to fuel harmful goal-directed eating disorder behaviours (Goss & Allan, 2010), individuals may experience a more stable affective state. With time, this emotional regulation could facilitate lasting improvements in markers of positive mental health, such as allowing individuals to enjoy more consistent feelings of positive affect or promoting the use of adaptive coping behaviours.

Although evidence for Gilbert's (2005) model would be theoretically and empirically compelling, it is also possible that other models of human behaviour may better or additionally explain the present findings. For instance, Basic Psychological Needs Theory, which is a mini-theory of Self-Determination Theory (Deci & Ryan, 2000), proposes that humans have fundamental needs for autonomy, competence, and relatedness to others, and that satisfying these needs is critical to positive mental health and well-being (Ryan & Deci, 2008). These basic needs are thought to be satisfied or thwarted based on one's social environment or contextual factors (Deci & Ryan, 2000). When individuals' psychological needs are not met, they may develop alternative goals to provide them with a sense of satisfaction or reward, such as striving to achieve a thin body, or develop compensatory behaviours in an effort to cope with the feelings of frustration stemming from their unmet needs, such as binge eating to escape these unpleasant emotions (Verstuyf et al., 2012). This frustration stemming from these unmet needs has been linked to engagement in disordered eating behaviours (Clermont et al., 2022; Matusitz & Martin, 2013). Recently, researchers have theorized and found support for the notion that individuals may use self-compassion as a way to fulfil their own basic needs, such as by recognizing when they experience a threat to their basic needs, coping with the feelings of frustration associated with these unmet needs, and taking steps to change their behaviours in a way that will satisfy their needs (Wouters-Soomers et al., 2022). In doing so, individuals have been found to

experience markers of positive mental health, such as positive affect and self-acceptance, even in instances where their basic psychological needs are not being satisfied (Wouters-Soomers et al., 2022). Future research would benefit from empirically testing which specific elements of existing theoretical models of human behaviour might best explain the observed associations between self-compassion and positive mental health in individuals with eating disorders.

Finally, positioned within a literature base that largely conceptualizes and studies self-compassion as a stable, trait-like variable (Neff, 2003a), this dissertation is one of a handful of studies to examine the nature and contribution of within-person fluctuations in self-compassion on clinically relevant outcomes. Consistent with prior research (e.g., Breines et al., 2014; Dupasqueir et al., 2020; Ewert et al., 2022), the current studies revealed that self-compassion levels fluctuated nearly as much within a given person, from one day or period of time to the next, as it did between people from one person to another. This finding is particularly meaningful in the context of eating disorder populations, who tend to report chronically low levels of self-compassion (Ferreira et al., 2013; Kelly et al., 2014) and significant barriers to treating themselves in a compassionate manner (Kelly et al., 2014). Whereas traditional, trait-based, conceptualizations of self-compassion imply that individuals low in self-compassion, such as those with eating disorders, are fated to experience poorer mental health, the results from this dissertation suggests that shifting the way in which one relates to oneself on a given day can influence markers of positive mental health in everyday life. Therefore, ongoing research that predominantly relies on trait-based conceptualizations of self-compassion may overlook critical, dynamic relationships between self-compassion and psychosocial experiences that occur within a given individual. Accordingly, future research would benefit from continuing to explore within-person variations in levels of self-compassion, investigating the ways in which within-person

fluctuations in self-compassion influence variables related to positive mental health and well-being.

Clinical Implications

Eating disorder treatment and recovery represent a non-linear and challenging process for individuals with eating disorders, requiring individuals to confront deeply ingrained patterns of thoughts, feelings, and behaviours (Kenny & Lewis, 2023; Webb et al., 2024). Many individuals seeking treatment often hope not to only alleviate the distressing symptoms of their eating disorder, but also to improve their overall quality of life and well-being (Emanuelli et al., 2012; Noordenbos & Seubring, 2006). This includes enhancing their interpersonal relationships, improving their ability to cope with life's challenges, and fostering more positive emotional states (Emanuelli et al., 2012; Noordenbos & Seubring, 2006). Although many individuals experience significant progress in addressing their eating disorder symptoms, it is common for some individuals to continue to face lasting impairments in domains related to positive mental health (Tomba et al., 2017; Tomba et al., 2019). Extending prior research that has shown that self-compassion interventions can reduce eating pathology, the present dissertation highlights the potential therapeutic value in helping individuals with eating disorders increase their levels of self-compassion to additionally promote their positive mental health.

Currently, existing research underscores the potential value of offering compassion-based interventions alongside traditional behavioral approaches to address eating disorder symptoms. This approach to treatment allows individuals with eating disorders to learn how to engage with and respond to feelings of shame and self-criticism in a self-compassionate manner, while simultaneously participating in cognitive and behavioral interventions traditionally aimed at addressing core eating pathology (Kelly et al., 2016). One might anticipate, based on the current

findings, that these compassion-based interventions could simultaneously enhance markers of positive mental health throughout treatment. For instance, helping individuals cultivate a more nurturing inner dialogue as a way to counteract and prevent harsh self-criticisms, such as by equipping them with self-compassionate statements (Gilbert, 2005), is likely to reduce negative and increase positive emotions (Neff et al., 2018) and promote feelings of self-acceptance (Zhang et al., 2019), key components of positive mental health. Further, learning and practicing self-compassionate behaviours that can be performed on a daily basis, such as mindfulness meditations, as well as more occasionally, such as donating clothes that no longer fit (Kelly et al., 2016), would likely contribute to a general sense of happiness and contentment in one's daily life (Mongrain et al., 2011), as well as increase one's ability to tolerate minor setbacks or challenges (Mey et al., 2023). Taken together, these interventions, when offered alongside traditional treatment, may not only help individuals cope with the challenges associated with confronting their disordered eating behaviours, but encourage the development of a more meaningful and fulfilling life. This strengthens the argument for treatment providers to integrate self-compassion into standard cognitive-behavioral interventions.

Clinicians may wish to experiment with the timing of compassion-based interventions depending on each client's unique treatment needs and goals. While not yet tested empirically, clinicians may find benefit from implementing self-compassion interventions at the start of treatment for clients who are not yet ready or motivated to directly address their eating disorder symptoms but are presenting to treatment due to a dissatisfaction with life domains related to positive mental health, such as their interpersonal relationships or ability to cope with adversity. This may be particularly relevant for individuals with chronic and long-lasting anorexia nervosa, who are deeply ambivalent about change, resistant to traditional treatments, and yet experience

significant impairments across most areas of their lives (Abbate-Daga, 2013; Dawson et al., 2014; Robinson et al., 2015). Providing compelling support for this suggestion are findings from prior research demonstrating that individuals with anorexia nervosa are still motivated and willing to complete a self-guided self-compassion intervention, even if they are not currently seeking treatment for their eating disorder (Kelly & Waring, 2018). Thus, incorporating self-compassion interventions, with emphasis being placed on the relevance and impact of these interventions to overall quality of life and well-being, might serve to reduce clients' psychosocial impairments but also enhance their motivation to engage in treatment given that it aligns with their goals (Tyron et al., 2018). Further, based on prior research, it is likely that cultivating self-compassion for the purpose of enhancing positive mental health could additionally reduce eating pathology (Turk & Waller, 2020) or the underlying processes that maintain it (e.g., feelings of shame; Goss & Allan, 2009).

Excitingly, findings from this dissertation suggest that if individuals are able to relate to themselves in a manner that is more self-compassionate than what is typical for them on a given day or during a given period of time, they might experience improvements in their positive mental health. These findings may offer a reassuring and hopeful message to individuals with eating disorders who are attempting to strengthen their capacity for self-compassion, though are confronted with cognitive or emotional barriers to doing so, such as fearing a drop in their personal standards (Geller et al., 2019; Geller et al., 2020; Kelly et al., 2021). Thus, clinicians may find it helpful to share with clients that, despite these challenges, treating themselves in a more self-compassionate manner, even on one day, can potentially elicit favourable changes to their positive mental health. Clinically, these findings may suggest that brief self-compassion practices that increase state levels of self-compassion, such as compassion-focused mental

imagery (McEwan & Gilbert, 2015; Rockliff et al., 2008) or soothing breathing exercises (Steffen et al., 2021), could enhance positive mental health in daily life. Future research would benefit from exploring the extent to which these self-guided interventions bolster positive mental health in the context of everyday life, as well as the immediacy of the experienced benefits of engaging in these interventions. One might anticipate that individuals who are able to recognize the immediate benefits of these in-the-moment self-compassion practices on outcomes related to positive mental health, such as positive affect, may be more willing to adhere to these practices moving forward. Clinicians may support clients in also attuning to these momentary benefits through encouraging clients to approach self-compassion practices in a mindful and curious manner, and to engage in self-reflective exercises to reflect on their daily experiences. If replicated and extended in future work, the findings from this dissertation could have profound implications for the ways in which clinicians understand and address impairments related to positive mental health among individuals with eating disorders.

Limitations and Future Directions

While there are several strengths across the three studies in this dissertation, there are also a number of limitations that pave the way for future research in this domain. First, as noted at several points throughout this dissertation, the correlational nature of the longitudinal study designs limits the ability to draw causal inferences about the mental health promoting effects of self-compassion. While it may be that self-compassion leads to improved positive mental health, as hypothesized based on prior empirical (Neff et al., 2007; Zessin, 2015) and theoretical (Neff, 2003a; Gilbert, 2014) research, it is also possible that individuals find it easier to treat themselves with compassion on days where they are experiencing more positive mental health. Indeed, prior research conducted in non-clinical samples suggests that the associations between

self-compassion and markers of positive mental health may be bidirectional in nature (e.g., Fraser et al., 2023; Liu et al., 2024), and that these variables may dynamically enhance one another over time (Fraser et al., 2023). Furthermore, it remains unclear from the present studies whether markers of positive mental health are amenable to change in eating disorder populations via self-compassion interventions, or whether the present associations only emerge in the context of naturally occurring fluctuations in self-compassion. Future research would benefit from employing experimental study designs to establish whether changes in self-compassion precede changes in positive mental health, and whether improvements in markers of positive mental health are possible via compassion-based interventions.

Second, as previously noted, the present studies were unable to test the mechanisms through which self-compassion is theoretically proposed to promote positive mental health in individuals with eating disorders, both within a given person and across people. It is noteworthy that this remains a gap in the broader literature on self-compassion, such that few studies have rigorously tested the mechanisms through which self-compassion is thought to both reduce suffering and improve well-being. Therefore, future research would benefit from extending the current studies to determine whether the observed associations can be explained by Gilbert (2005) and Neff's (2003a) models of self-compassion, or whether they are more accurately captured by alternative models of psychological functioning (e.g., Deci & Ryan, 2000).

Third, the present studies all relied on self-report measurement, prompting participants to retrospectively reflect on the extent to which they treated themselves in a self-compassionate manner and experienced different markers of positive mental health over a specified time period (e.g., 'that day' or 'in general'). Although the time frame participants were asked to reflect on was minimized in Study 1 and Study 2 by asking individuals to complete self-report measures on

a daily basis, the fact that participants were asked to reflect on their daily experiences at the end of each day increases the likelihood of recall bias (Bolger et al., 2003; Parkinson et al., 1995). Thus, future research would benefit from collecting more frequent responses from participants within a given day via ecological momentary assessment. Beyond the potential impact of recall bias, self-report measurement requires that participants have some level of insight into their thoughts, feelings, and behaviours. However, it is possible that individuals may fail to recognize subtle changes in their internal or external experiences, such as changes in how soothed they feel in the presence of others. An interesting future direction would be to incorporate more objective forms of measurement that are sensitive to subtle changes in arousal, such as measures of heart rate variability (Acharya et al., 2006; Faskhodi et al., 2023) or electrodermal activity (Critchley, 2002), especially given that prior research has shown that these physiological markers underlie key elements of positive mental health, such as the ability to effectively regulate one's emotions (Geisler et al., 2010).

Fourth, findings from this dissertation consistently demonstrated that within-person increases in self-compassion were associated with self-reported improvements in markers of positive mental health. However, the present studies were unable to decipher whether the benefits of self-compassion manifest in meaningful, day-to-day changes in markers of positive mental health in participants' lives. For instance, it is possible that for individuals with dispositionally low levels of positive affect, for example, even statistically significant increases may result in only a modest improvement in their perceived mood states—shifting from very low to just somewhat low positive affect, both of which may be perceived as undesirable to the individual. Accordingly, an interesting next step for future research would be to extend the current investigations by collecting qualitative data on participants' perceptions of their daily

experiences. This would enable researchers to test whether days marked by higher-than-usual self-compassion are associated with more qualitatively positive evaluations of an individual's day, such as greater positive affect or an increased ability to cope with stressors. A similar investigation could be conducted at the momentary level using ecological momentary assessment, such as by prompting participants to provide qualitative details on their current circumstances, thoughts, feelings, and behaviours in moments that they report higher-than-usual self-compassion. More broadly, it would be interesting for future investigations to explore the extent to which an individual with eating disorders needs to deviate from their personal mean level of self-compassion on a given day in order to notice subjective improvements in markers of positive mental health in their daily life.

Fifth, two of the three studies contained in this dissertation relied on data that were collected as part of larger studies in eating disorder populations. The decision to analyze older data sets were made given the resources, time, and participant burden involved in collecting clinical data, and the possibility of addressing research questions of interest in these data sets given the variables they contain. However, this use of secondary data limited the measures available and thus the extent to which I was able to test the links between self-compassion and broader, more holistic, models of positive mental health that reflect multiple facets of social, emotional, and psychological well-being (e.g., Ryff, 1989; Seligman, 2011). Future research would benefit from replicating and extending the studies contained within this dissertation using validated measures of positive mental health (e.g., Keyes, 2008). Furthermore, it is important to note that this dissertation utilized data that were collected at various time points over the course of approximately 10 years. Specifically, data from Study 1 was collected in 2013 to 2016, Study 2 was collected from 2019 to 2020, and Study 3 was collected from 2010 to 2012. On the one

hand, it is a relative strength that the present dissertation found support for the links between self-compassion and positive mental health across samples collected over this duration of time. However, it is also worth noting that there may have been sociocultural changes that have occurred across time that might have resulted in differences in the lived experiences of individuals with eating disorders across samples. For instance, over the past decade there has been a societal shift in the ways in which individuals think and talk about their bodies (Cohen et al., 2019), as well as the rise of social media applications, such as TikTok, that have been found to perpetuate disordered eating thoughts and behaviours (Griffiths et al., 2024). There has also been an increased emphasis on the importance of attending to and prioritizing one's mental health and well-being in daily life (World Health Organization, 2022). Thus, although the diagnosis and classification of eating disorders remained largely unchanged across the three studies, it is important to consider the fact that the social context individuals are exposed to and the types of challenges individuals with eating disorders face may have been different in each sample. It would be interesting for future research to investigate how socioecological factors, such as cultural norms around eating, body image, and positive mental health, influence the associations observed in the present studies.

Conclusions

The findings from this dissertation are the first, to my knowledge, to demonstrate the potential value of self-compassion for enhancing markers of positive mental health in individuals with eating disorders. The present longitudinal studies found that individuals with eating disorders report greater indicators of positive mental health—namely positive affect, social safeness, and/or use of adaptive coping behaviours—when they are more self-compassionate than others, than usual on a given day or than the preceding day, and over brief periods of time

during eating disorders treatment. The current findings are a timely response to a call in the field of eating disorders to identify factors that not only reduce symptoms of mental illness, but also enhance markers of positive health in individuals with eating disorders. This dissertation provides theoretical support for the dual continuum of mental health in individuals with eating disorders, suggesting that it is possible for individuals with eating disorders to experience fluctuations in positive mental health despite the presence of active eating pathology. Furthermore, findings provide empirical support for the theory that self-compassion may act to not only reduce symptoms of mental illness, as demonstrated in prior work, but additionally enhance markers of positive mental health in individuals with eating disorders. Though further investigation is needed, these results highlight the potential merit of incorporating self-compassion interventions into existing eating disorders treatment.

References

- Abbate-Daga, G., Amianto, F., Delsedime, N., De-Bacco, C., & Fassino, S. (2013). Resistance to treatment and change in anorexia nervosa: A clinical overview. *BMC Psychiatry*, *13*(1). <https://doi.org/10.1186/1471-244x-13-294>
- Abraham, S. F., Brown, T., Boyd, C., Luscombe, G., & Russell, J. (2006). Quality of life: Eating disorders. *Australian & New Zealand Journal of Psychiatry*, *40*(2), 150–155. <https://doi.org/10.1080/j.1440-1614.2006.01762.x>
- Ackard, D. M., Richter, S., Egan, A., Engel, S., & Cronemeyer, C. L. (2013). The meaning of (quality of) life in patients with eating disorders: A comparison of generic and disease-specific measures across diagnosis and outcome. *International Journal of Eating Disorders*, *47*(3), 259–267. <https://doi.org/10.1002/eat.22193>
- Adams, C. E., & Leary, M. R. (2007). Promoting self-compassionate attitudes toward eating among restrictive and guilty eaters. *Journal of Social and Clinical Psychology*, *26*(10), 1120–1144. <https://doi.org/10.1521/jscp.2007.26.10.1120>
- Adams, K. L., Mandy, W., Catmur, C., & Bird, G. (2024). Potential mechanisms underlying the association between feeding and eating disorders and autism. *Neuroscience & Biobehavioral Reviews*, *162*, 105717. <https://doi.org/10.1016/j.neubiorev.2024.105717>
- Akin, A., & Akin, U. (2015). The mediating role of social safeness on the relationship between Facebook® use and life satisfaction. *Psychological Reports*, *117*(2), 341–353. <https://doi.org/10.2466/18.07.pr0.117c20z9>
- Akin, U. (2014). Self-compassion and Loneliness. *International Online Journal of Educational Sciences*, *2*(3), 702–718. <https://doi.org/10.15345/iojes.2014.01.011>

- Albertson, E. R., Neff, K. D., & Dill-Shackleford, K. E. (2014). Self-compassion and body dissatisfaction in women: A randomized controlled trial of a brief meditation intervention. *Mindfulness*, 6(3), 444–454. <https://doi.org/10.1007/s12671-014-0277-3>
- Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59(5), 1066–1074. <https://doi.org/10.1037/0022-3514.59.5.1066>
- Arcelus, J., Haslam, M., Farrow, C., & Meyer, C. (2013). The role of interpersonal functioning in the maintenance of eating psychopathology: A systematic review and testable model. *Clinical Psychology Review*, 33(1), 156–167. <https://doi.org/10.1016/j.cpr.2012.10.009>
- Arch, J. J., Brown, K. W., Dean, D. J., Landy, L. N., Brown, K. D., & Laudenslager, M. L. (2014). Self-compassion training modulates alpha-amylase, heart rate variability, and subjective responses to social evaluative threat in women. *Psychoneuroendocrinology*, 42, 49–58. <https://doi.org/10.1016/j.psyneuen.2013.12.018>
- Armstrong, B. F. III, Nitschke, J. P., Bilash, U., & Zuroff, D. C. (2021). An affect in its own right: Investigating the relationship of social safeness with positive and negative affect. *Personality and Individual Differences*, 168, 109670. <https://doi.org/10.1016/j.paid.2019.109670>
- Asmari, Y., Dolatshahi, B., Poursharifi, H., & Barahmand, U. (2022). Early negative memories, humiliation and defectiveness/shame schema: An emotion-focused therapeutic approach to social anxiety. *Journal of Evidence-Based Psychotherapies*, 22(1), 117–136. <https://doi.org/10.24193/jebp.2022.1.7>
- American Psychiatric Association. (2022). *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)*. American Psychiatric Publishing.

- American Psychiatric Association. (2023). *The American Psychiatric Association Practice Guideline for the Treatment of Patients with Eating Disorders* (4th ed.). American Psychiatric Publishing.
- Atlas, J. G. (2004). Interpersonal sensitivity, eating disorder symptoms, and eating/ thinness expectancies. *Current Psychology*, 22(4), 368–378. <https://doi.org/10.1007/s12144-004-1041-y>
- Atwood, M. E., & Friedman, A. (2019). A systematic review of enhanced cognitive behavioral therapy (CBT-E) for eating disorders. *International Journal of Eating Disorders*, 53(3), 311–330. <https://doi.org/10.1002/eat.23206>
- Augustine, A. A., & Larsen, R. J. (2012). Is a trait really the mean of states? *Journal of Individual Differences*, 33(3), 131–137. <https://doi.org/10.1027/1614-0001/a000083>
- Austin, A., Anderson, A. G., Lee, J., Vander Steen, H., Savard, C., Bergmann, C., Singh, M., Devoe, D., Gorrell, S., Patten, S., Le Grange, D., & Dimitropoulos, G. (2024). Efficacy of eating disorder focused family therapy for adolescents with anorexia nervosa: A systematic review and meta-analysis. *International Journal of Eating Disorders*, 58(1), 3–36. <https://doi.org/10.1002/eat.24252>
- Bachner-Melman, R., Zohar, A. H., & Ebstein, R. P. (2006). An examination of cognitive versus behavioral components of recovery from anorexia nervosa. *Journal of Nervous & Mental Disease*, 194(9), 697–703. <https://doi.org/10.1097/01.nmd.0000235795.51683.99>
- Baer, R. A., Lykins, E. L. B., & Peters, J. R. (2012). Mindfulness and self-compassion as predictors of psychological wellbeing in long-term meditators and matched nonmeditators. *The Journal of Positive Psychology*, 7(3), 230–238. <https://doi.org/10.1080/17439760.2012.674548>

- Baier, A. L., Kline, A. C., & Feeny, N. C. (2020). Therapeutic alliance as a mediator of change: A systematic review and evaluation of research. *Clinical Psychology Review*, 82, 101921. <https://doi.org/10.1016/j.cpr.2020.101921>
- Ball, K., & Lee, C. (2000). Relationships between psychological stress, coping and disordered eating: A review. *Psychology & Health*, 14(6), 1007–1035. <https://doi.org/10.1080/08870440008407364>
- Barakat, S., McLean, S. A., Bryant, E., Le, A., Marks, P., National Eating Disorder Research Consortium, Touyz, S., & Maguire, S. (2023). Risk factors for eating disorders: Findings from a rapid review. *Journal of Eating Disorders*, 11(1). <https://doi.org/10.1186/s40337-022-00717-4>
- Bardone-Cone, A. M., Harney, M. B., Maldonado, C. R., Lawson, M. A., Robinson, D. P., Smith, R., & Tosh, A. (2010). Defining recovery from an eating disorder: Conceptualization, validation, and examination of psychosocial functioning and psychiatric comorbidity. *Behaviour Research and Therapy*, 48(3), 194–202. <https://doi.org/10.1016/j.brat.2009.11.001>
- Bardone-Cone, A. M., Hunt, R. A., & Watson, H. J. (2018). An overview of conceptualizations of eating disorder recovery, recent findings, and future directions. *Current Psychiatry Reports*, 20(9). <https://doi.org/10.1007/s11920-018-0932-9>
- Barry, A. E., Szucs, L. E., Reyes, J. V., Ji, Q., Wilson, K. L., & Thompson, B. (2016). Failure to report effect sizes. *Health Education & Behavior*, 43(5), 518–527. <https://doi.org/10.1177/1090198116669521>

- Batchelor, R., Cribben, H., Macdonald, P., Treasure, J., Cini, E., Nicholls, D., & Kan, C. (2022). The experiential perspectives of siblings and partners caring for a loved one with an eating disorder in the UK. *BJPsych Open*, 8(2). <https://doi.org/10.1192/bjo.2022.43>
- Bell, B. A., Morgan, G. B., Schoeneberger, J. A., Kromrey, J. D., & Ferron, J. M. (2014). How low can you go? *Methodology*, 10(1), 1–11. <https://doi.org/10.1027/1614-2241/a000062>
- Bell, B. A., Morgan, G. B., Schoeneberger, J. A., Loudermilk, B. L., Kromrey, J. D., & Ferron, J. M. (2010, April). Dancing the sample size limbo with mixed models: How low can you go?. Paper presentation. *SAS Global Forum*.
<https://support.sas.com/resources/papers/proceedings10/197-2010.pdf>
- Bell B.A., Morgan G.B., Kromrey J.D., Ferron J.M.. (2010, July 31-August 5). The impact of small cluster size on multilevel models: a Monte Carlo examination of two-level models with binary and continuous predictors. In: Proceedings of the 2010 Joint Statistical Meetings, Section on Survey Research Methods. (pp. 4057–4067). ASA.
http://www.asasrms.org/Proceedings/y2010/Files/308112_60089.pdf.
- Beresin, E. V., Gordon, C., & Herzog, D. B. (1989). The process of recovering from anorexia nervosa. *Journal of the American Academy of Psychoanalysis*, 17(1), 103–130.
<https://doi.org/10.1521/jaap.1.1989.17.1.103>
- Biehler, K. M., Jenzer, T., & Read, J. P. (2024). Daily-level self-compassion and coping-motivated drinking. *Mindfulness*, 15(7), 1846–1860. <https://doi.org/10.1007/s12671-024-02407-5>
- Björk, T., & Ahlström, G. (2008). The patient's perception of having recovered from an eating disorder. *Health Care For Women International*, 29(8), 926–944.
<https://doi.org/10.1080/07399330802269543>

- Bloch, J. H. (2018). *Self-Compassion, Social Connectedness, and Interpersonal Competence* (pp. 1–30) [Master Thesis, University of Montana]. ScholarWorks.
- Bloks, H., Spinhoven, P., Callewaert, I., Willemse-Koning, C., & Turksma, A. (2001). Changes in coping styles and recovery after inpatient treatment for severe eating disorders. *European Eating Disorders Review*, 9(6), 397–415. <https://doi.org/10.1002/erv.408>
- Boellinghaus, I., Jones, F. W., & Hutton, J. (2012). The role of mindfulness and loving-kindness meditation in cultivating self-compassion and other-focused concern in health care professionals. *Mindfulness*, 5(2), 129–138. <https://doi.org/10.1007/s12671-012-0158-6>
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary Methods: Capturing Life as it is Lived. *Annual Review of Psychology*, 54(1), 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Bowlby, C. G., Anderson, T. L., Hall, M. E. L., & Willingham, M. M. (2012). Recovered professionals exploring eating disorder recovery: A qualitative investigation of meaning. *Clinical Social Work Journal*, 43(1), 1–10. <https://doi.org/10.1007/s10615-012-0423-0>
- Breines, J., Toole, A., Tu, C., & Chen, S. (2013). Self-compassion, body image, and self-reported disordered eating. *Self and Identity*, 13(4), 432–448. <https://doi.org/10.1080/15298868.2013.838992>
- Brenner, R. E., Heath, P. J., Vogel, D. L., & Credé, M. (2017). Two is more valid than one: Examining the factor structure of the Self-Compassion Scale (SCS). *Journal of Counseling Psychology*, 64(6), 696–707. <https://doi.org/10.1037/cou0000211>
- Brill, M., & Nahmani, N. (2016). The Presence of Compassion in therapy. *Clinical Social Work Journal*, 45(1), 10–21. <https://doi.org/10.1007/s10615-016-0582-5>

- Broberg, A. G., Hjalmer, I., & Nevenon, L. (2001). Eating disorders, attachment and interpersonal difficulties: A comparison between 18- to 24-year-old patients and normal controls. *European Eating Disorders Review*, 9(6), 381–396.
<https://doi.org/10.1002/erv.421>
- Brockmeyer, T., Skunde, M., Wu, M., Bresslein, E., Rudofsky, G., Herzog, W., & Friederich, H.-C. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, 55(3), 565–571.
<https://doi.org/10.1016/j.comppsy.2013.12.001>
- Brophy, K., Brähler, E., Hinz, A., Schmidt, S., & Körner, A. (2020). The role of self-compassion in the relationship between attachment, depression, and quality of life. *Journal of Affective Disorders*, 260, 45–52. <https://doi.org/10.1016/j.jad.2019.08.066>
- Bryant, E., Spielman, K., Le, A., Marks, P., National Eating Disorder Research Consortium, Touyz, S., & Maguire, S. (2022). Screening, assessment and diagnosis in the eating disorders: Findings from a rapid review. *Journal of Eating Disorders*, 10(1).
<https://doi.org/10.1186/s40337-022-00597-8>
- Bryson, C., Douglas, D., & Schmidt, U. (2024). Established and emerging treatments for eating disorders. *Trends in Molecular Medicine*, 30(4), 392–402.
<https://doi.org/10.1016/j.molmed.2024.02.009>
- Burlingame, G. M., McClendon, D. T., & Yang, C. (2018). Cohesion in group therapy: A meta-analysis. *Psychotherapy*, 55(4), 384–398. <https://doi.org/10.1037/pst0000173>
- Busseri, M. A. (2018). Examining the structure of subjective well-being through meta-analysis of the associations among positive affect, negative affect, and life satisfaction. *Personality and Individual Differences*, 122, 68–71. <https://doi.org/10.1016/j.paid.2017.10.003>

- Cadena, S. B. R., Iyer, A., Webb, T. L., & Millings, A. (2024). Understanding the relationship between self-compassion and body dissatisfaction. *Journal of Applied Social Psychology*, 54(11), 669–682. <https://doi.org/10.1111/jasp.13065>
- Canals, J., Sancho, C., & Arija, M. V. (2009). Influence of parent's eating attitudes on eating disorders in school adolescents. *European Child & Adolescent Psychiatry*, 18(6), 353–359. <https://doi.org/10.1007/s00787-009-0737-9>
- Cardi, V., Matteo, R. D., Corfield, F., & Treasure, J. (2012). Social reward and rejection sensitivity in eating disorders: An investigation of attentional bias and early experiences. *The World Journal of Biological Psychiatry*, 14(8), 622–633. <https://doi.org/10.3109/15622975.2012.665479>
- Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology*, 61(1), 679–704. <https://doi.org/10.1146/annurev.psych.093008.100352>
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267–283. <https://doi.org/10.1037/0022-3514.56.2.267>
- Casiero, D., & Frishman, W. H. (2006). Cardiovascular complications of eating disorders. *Cardiology in Review*, 14(5), 227–231. <https://doi.org/10.1097/01.crd.0000216745.96062.7c>
- Castellini, G., Lo Sauro, C., Mannucci, E., Ravaldi, C., Rotella, C. M., Faravelli, C., & Ricca, V. (2011). Diagnostic crossover and outcome predictors in eating disorders according to DSM-IV and DSM-V proposed criteria: A 6-year follow-up study. *Psychosomatic Medicine*, 73(3), 270–279. <https://doi.org/10.1097/psy.0b013e31820a1838>

- Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2015). Evaluating the multifactor structure of the long and short versions of the self-compassion scale in a clinical sample. *Journal of Clinical Psychology, 71*(9), 856–870. <https://doi.org/10.1002/jclp.22187>
- Cavedini, P., Bassi, T., Ubbiali, A., Casolari, A., Giordani, S., Zorzi, C., & Bellodi, L. (2004). Neuropsychological investigation of decision-making in anorexia nervosa. *Psychiatry Research, 127*(3), 259–266. <https://doi.org/10.1016/j.psychres.2004.03.012>
- Chakroborty, S., & Vohra, N. (2021). Relationship between social safeness and resilience amongst college students: An empirical study. *Indian Journal of Positive Psychology, 12*(4), 392–396.
- Chen, E. Y., Weissman, J. A., Zeffiro, T. A., Yiu, A., Eneva, K. T., Arlt, J. M., & Swantek, M. J. (2016). Family-based therapy for young adults with Anorexia Nervosa restores weight. *International Journal of Eating Disorders, 49*(7), 701–707. <https://doi.org/10.1002/eat.22513>
- Chishima, Y., Mizuno, M., Sugawara, D., & Miyagawa, Y. (2018). The influence of self-compassion on cognitive appraisals and coping with stressful events. *Mindfulness, 9*(6), 1907–1915. <https://doi.org/10.1007/s12671-018-0933-0>
- Clermont, C., Paquette, L., Lalande, D., & Dion, J. (2022). Self-determination, restrictive eating, and psychological needs: Challenges for young athletes. *Brain and Behavior, 12*(11). <https://doi.org/10.1002/brb3.2761>
- Cockell, S. J., Zaitsoff, S. L., & Geller, J. (2004). Maintaining change following eating disorder treatment. *Professional Psychology: Research and Practice, 35*(5), 527–534. <https://doi.org/10.1037/0735-7028.35.5.527>

- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.
<https://doi.org/10.1037/0033-2909.112.1.155>
- Cohen, R., Irwin, L., Newton-John, T., & Slater, A. (2019). #bodypositivity: A content analysis of body positive accounts on Instagram. *Body Image*, 29, 47–57.
<https://doi.org/10.1016/j.bodyim.2019.02.007>
- Connan, F., Troop, N., Landau, S., Campbell, I. C., & Treasure, J. (2007). Poor social comparison and the tendency to submissive behavior in anorexia nervosa. *International Journal of Eating Disorders*, 40(8), 733–739. <https://doi.org/10.1002/eat.20427>
- Corstorphine, E. (2006). Cognitive–Emotional–Behavioural Therapy for the eating disorders: Working with beliefs about emotions. *European Eating Disorders Review*, 14(6), 448–461. <https://doi.org/10.1002/erv.747>
- Corstorphine, E., Mountford, V., Tomlinson, S., Waller, G., & Meyer, C. (2007). Distress tolerance in the eating disorders. *Eating Behaviors*, 8(1), 91–97.
<https://doi.org/10.1016/j.eatbeh.2006.02.003>
- Costa, J., & Pinto-Gouveia, J. (2013). Experiential avoidance and self-compassion in chronic pain. *Journal of Applied Social Psychology*, 43(8), 1578–1591.
<https://doi.org/10.1111/jasp.12107>
- Costandache, G. I., Munteanu, O., Salaru, A., Oroian, B., & Cozmin, M. (2023). An overview of the treatment of eating disorders in adults and adolescents: Pharmacology and psychotherapy. *Postępy Psychiatrii i Neurologii*, 32(1), 40–48.
<https://doi.org/10.5114/ppn.2023.127237>
- Couturier, J., Isserlin, L., Norris, M., Spettigue, W., Brouwers, M., Kimber, M., McVey, G., Webb, C., Findlay, S., Bhatnagar, N., Snelgrove, N., Ritsma, A., Preskow, W., Miller, C.,

- Coelho, J., Boachie, A., Steinegger, C., Loewen, R., Loewen, T., ... Pilon, D. (2020). Canadian practice guidelines for the treatment of children and adolescents with eating disorders. *Journal of Eating Disorders*, 8(1). <https://doi.org/10.1186/s40337-020-0277-8>
- Cozolino, L. J. (2014). *The neuroscience of human relationships: Attachment and the developing social brain* (2nd ed.). W. W. Norton & Company.
- Cramer, V., Torgersen, S., & Kringle, E. (2006). Personality disorders and quality of life. A population study. *Comprehensive Psychiatry*, 47(3), 178–184.
<https://doi.org/10.1016/j.comppsy.2005.06.002>
- Critchley, H. D. (2002). Review: Electrodermal responses: What happens in the brain. *The Neuroscientist*, 8(2), 132–142. <https://doi.org/10.1177/107385840200800209>
- Crosby, R. D., Wonderlich, S. A., Engel, S. G., Simonich, H., Smyth, J., & Mitchell, J. E. (2009). Daily mood patterns and bulimic behaviors in the natural environment. *Behaviour Research and Therapy*, 47(3), 181–188. <https://doi.org/10.1016/j.brat.2008.11.006>
- Crowther, J. H., Sanftner, J., Bonifazi, D. Z., & Shepherd, K. L. (2001). The role of daily hassles in binge eating. *International Journal of Eating Disorders*, 29(4), 449–454.
<https://doi.org/10.1002/eat.1041>
- Culbert, K. M., Racine, S. E., & Klump, K. L. (2015). Research Review: What we have learned about the causes of eating disorders – a synthesis of sociocultural, psychological, and biological research. *Journal of Child Psychology and Psychiatry*, 56(11), 1141–1164.
<https://doi.org/10.1111/jcpp.12441>
- Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. *Annual Review of Psychology*, 62(1), 583–619.
<https://doi.org/10.1146/annurev.psych.093008.100356>

- Cutrona, C. E., & Russell, D. (1987). The provisions of social relationships and adaptation to stress. In *H. Jones & D. Perlman (Eds), Advances in Personal Relationships* (pp. 33–67). Greenwich.
- Daley, K. A., Jimerson, D. C., Heatherton, T. F., Metzger, E. D., & Wolfe, B. E. (2008). State self-esteem ratings in women with bulimia nervosa and bulimia nervosa in remission. *International Journal of Eating Disorders, 41*(2), 159–163.
<https://doi.org/10.1002/eat.20447>
- Dang, A., Fuller-Tyszkiewicz, M., De La Harpe, S., Rozenblat, V., Giles, S., Kiropoulos, L., & Krug, I. (2021). Do women with differing levels of trait eating pathology experience daily stress and body dissatisfaction differently? *European Psychiatry, 64*(S1), S704–S705. <https://doi.org/10.1192/j.eurpsy.2021.1866>
- Darcy, A. M., Katz, S., Fitzpatrick, K. K., Forsberg, S., Utzinger, L., & Lock, J. (2010). All better? How former anorexia nervosa patients define recovery and engaged in treatment. *European Eating Disorders Review, 18*(4), 260–270. <https://doi.org/10.1002/erv.1020>
- Davies, M. M., Bekker, M. H. J., & Roosen, M. A. (2011). The role of coping and general psychopathology in the prediction of treatment outcome in eating disorders. *Eating Disorders, 19*(3), 246–258. <https://doi.org/10.1080/10640266.2011.566147>
- Dawson, L., Rhodes, P., & Touyz, S. (2014). “Doing the impossible”: The Process of Recovery From Chronic Anorexia Nervosa. *Qualitative Health Research, 24*(4), 494–505.
<https://doi.org/10.1177/1049732314524029>
- de Carvalho Barreto, M., Ferreira, C., Marta-Simões, J., & Mendes, A. L. (2018). Exploring the paths between self-compassionate attributes and actions, body compassion and disordered

- eating. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 25(2), 291–297. <https://doi.org/10.1007/s40519-018-0581-3>
- de la Rie, S. M., Noordenbos, G., & van Furth, E. F. (2005). Quality of life and eating disorders. *Quality of Life Research*, 14(6), 1511–1521. <https://doi.org/10.1007/s11136-005-0585-0>
- de Vos, J. A., LaMarre, A., Radstaak, M., Bijkerk, C. A., Bohlmeijer, E. T., & Westerhof, G. J. (2017). Identifying fundamental criteria for eating disorder recovery: A systematic review and qualitative meta-analysis. *Journal of Eating Disorders*, 5(1). <https://doi.org/10.1186/s40337-017-0164-0>
- de Vos, J. A., Radstaak, M., Bohlmeijer, E. T., & Westerhof, G. J. (2018). Having an eating disorder and still being able to flourish? Examination of pathological symptoms and well-being as two continua of mental health in a clinical sample. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.02145>
- de Vos, J. A., Radstaak, M., Bohlmeijer, E. T., & Westerhof, G. J. (2021). The psychometric network structure of mental health in eating disorder patients. *European Eating Disorders Review*, 29(4), 559–574. <https://doi.org/10.1002/erv.2832>
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/s15327965pli1104_01
- Depue, R. A., & Morrone-Strupinsky, J. V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences*, 28(03). <https://doi.org/10.1017/s0140525x05000063>

- Dryman, M. T., & Heimberg, R. G. (2018). Emotion regulation in social anxiety and depression: A systematic review of expressive suppression and cognitive reappraisal. *Clinical Psychology Review*, 65, 17–42. <https://doi.org/10.1016/j.cpr.2018.07.004>
- Duarte, C., Ferreira, C., & Pinto-Gouveia, J. (2016). At the core of eating disorders: Overvaluation, social rank, self-criticism and shame in anorexia, bulimia and binge eating disorder. *Comprehensive Psychiatry*, 66, 123–131. <https://doi.org/10.1016/j.comppsy.2016.01.003>
- Duarte, C., Pinto-Gouveia, J., & Stubbs, R. J. (2017). Compassionate Attention and Regulation of Eating Behaviour: A pilot study of a brief low-intensity intervention for binge eating. *Clinical Psychology & Psychotherapy*, 24(6), O1437-O1447. <https://doi.org/10.1002/cpp.2094>
- Dundas, I., Binder, P., Hansen, T. G. B., & Stige, S. H. (2017). Does a short self-compassion intervention for students increase healthy self-regulation? A randomized control trial. *Scandinavian Journal of Psychology*, 58(5), 443–450. <https://doi.org/10.1111/sjop.12385>
- Dunkley, D. M., Sanislow, C. A., Grilo, C. M., & McGlashan, T. H. (2009). Self-criticism versus neuroticism in predicting depression and psychosocial impairment for 4 years in a clinical sample. *Comprehensive Psychiatry*, 50(4), 335–346. <https://doi.org/10.1016/j.comppsy.2008.09.004>
- Dupasquier, J. R., Kelly, A. C., Moscovitch, D. A., & Vidovic, V. (2017). Practicing self-compassion weakens the relationship between fear of receiving compassion and the desire to conceal negative experiences from others. *Mindfulness*, 9(2), 500–511. <https://doi.org/10.1007/s12671-017-0792-0>

- Dupasquier, J. R., Kelly, A. C., Waring, S. V., & Moscovitch, D. A. (2020). Self-compassionate college women report receiving more social support in the face of distress: Evidence from a daily diary study. *Personality and Individual Differences, 154*, 109680. <https://doi.org/10.1016/j.paid.2019.109680>
- Edwards, L. J., Muller, K. E., Wolfinger, R. D., Qaqish, B. F., & Schabenberger, O. (2008). An R2 statistic for fixed effects in the linear mixed model. *Statistics in Medicine, 27*(29), 6137–6157. <https://doi.org/10.1002/sim.3429>
- Eielsen, H. P., Vrabel, K., Hoffart, A., Rø, Ø., & Rosenvinge, J. H. (2021). The 17-year outcome of 62 adult patients with longstanding eating disorders—A prospective study. *International Journal of Eating Disorders, 54*(5), 841–850. <https://doi.org/10.1002/eat.23495>
- Eklund, M., Hermansson, A., & Håkansson, C. (2012). Meaning in Life for People with Schizophrenia: Does it Include Occupation? *Journal of Occupational Science, 19*(2), 93–105. <https://doi.org/10.1080/14427591.2011.605833>
- Emanuelli, F., Waller, G., Jones-Chester, M., & Ostuzzi, R. (2012). Recovery from disordered eating: Sufferers' and clinicians' perspectives. *European Eating Disorders Review, 20*(5), 363–372. <https://doi.org/10.1002/erv.2159>
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*(2), 121–138. <https://doi.org/10.1037/1082-989x.12.2.121>
- Engen, H. G., & Singer, T. (2015). Compassion-based emotion regulation up-regulates experienced positive affect and associated neural networks. *Social Cognitive and Affective Neuroscience, 10*(9), 1291–1301. <https://doi.org/10.1093/scan/nsv008>

- Enrique, A., Bretón-López, J., Molinari, G., Llorca, G., & Botella, C. (2020). Implementation of a positive psychology group program in an inpatient eating disorders service: A pilot study. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 26(2), 679–688. <https://doi.org/10.1007/s40519-020-00908-5>
- Enrique, A., Bretón-López, J., Molinari, G., Roca, P., Llorca, G., Guillén, V., Fernández-Aranda, F., Baños, R. M., & Botella, C. (2018). Implementation of a positive technology application in patients with eating disorders: A pilot randomized control trial. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00934>
- Eshkevari, E., Rieger, E., Longo, M. R., Haggard, P., & Treasure, J. (2013). Persistent body image disturbance following recovery from eating disorders. *International Journal of Eating Disorders*, 47(4), 400–409. <https://doi.org/10.1002/eat.22219>
- Ewert, C., Hoffmann, C. F. A., & Schröder-Abé, M. (2022). Stress processing mediates the link between momentary self-compassion and affective well-being. *Mindfulness*, 13(9), 2269–2281. <https://doi.org/10.1007/s12671-022-01954-z>
- Ewert, C., Vater, A., & Schröder-Abé, M. (2021). Self-Compassion and coping: A meta-analysis. *Mindfulness*, 12(5), 1063–1077. <https://doi.org/10.1007/s12671-020-01563-8>
- Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. Guilford Press.
- Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders*, 16(4), 363–370. [https://doi.org/10.1002/1098-108x\(199412\)16:4<363::aid-eat2260160405>3.0.co;2-#](https://doi.org/10.1002/1098-108x(199412)16:4<363::aid-eat2260160405>3.0.co;2-#)
- Federici, A., & Kaplan, A. S. (2007). The patient's account of relapse and recovery in anorexia nervosa: A qualitative study. *European Eating Disorders Review*, 16(1), 1–10. <https://doi.org/10.1002/erv.813>

- Ferrari, M., Hunt, C., Harrysunker, A., Abbott, M. J., Beath, A. P., & Einstein, D. A. (2019). Self-Compassion interventions and psychosocial outcomes: A meta-analysis of rcts. *Mindfulness*, 10(8), 1455–1473. <https://doi.org/10.1007/s12671-019-01134-6>
- Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2013). Self-compassion in the face of shame and body image dissatisfaction: Implications for eating disorders. *Eating Behaviors*, 14(2), 207–210. <https://doi.org/10.1016/j.eatbeh.2013.01.005>
- Ferreira, C., Silva, C., Mendes, A. L., & Trindade, I. A. (2017). How do warmth, safeness and connectedness-related memories and experiences explain disordered eating? *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 23(5), 629–636. <https://doi.org/10.1007/s40519-017-0449-y>
- Fitzsimmons, E. E., & Bardone-Cone, A. M. (2010). Differences in coping across stages of recovery from an eating disorder. *International Journal of Eating Disorders*, 43(8), 689–693. <https://doi.org/10.1002/eat.20781>
- Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology*, 80(6), 1011–1027. <https://doi.org/10.1037/0022-3514.80.6.1011>
- Fleeson, W. (2004). Moving personality beyond the person-situation debate. *Current Directions in Psychological Science*, 13(2), 83–87. <https://doi.org/10.1111/j.0963-7214.2004.00280.x>
- Fraser, M. I., Ciarrochi, J., Sahdra, B. K., & Hunt, C. (2023). To be compassionate and feel worthy: The bidirectional relationship between self-compassion and self-esteem. In *Mindfulness in Behavioral Health* (pp. 33–51). Springer. https://doi.org/10.1007/978-3-031-22348-8_3

- Fresnics, A. A., Wang, S. B., & Borders, A. (2019). The unique associations between self-compassion and eating disorder psychopathology and the mediating role of rumination. *Psychiatry Research*, 274, 91–97. <https://doi.org/10.1016/j.psychres.2019.02.019>
- Funder, D. C. (2008). Persons, situations, and person-situation interactions. In *Handbook of Personality: Theory and Research* (pp. 569–580). Guilford Press.
- Gale, C., Gilbert, P., Read, N., & Goss, K. (2012). An evaluation of the impact of introducing compassion focused therapy to a standard treatment programme for people with eating disorders. *Clinical Psychology & Psychotherapy*, 21(1), 1–12. <https://doi.org/10.1002/cpp.1806>
- Gavrilova, L., & Zawadzki, M. J. (2023). Mindfulness mechanisms in everyday life: Examining variance in acceptance, attention monitoring, decentering, self-compassion, and nonreactivity and their links to negative emotions among a workplace sample. *Cognition and Emotion*, 37(7), 1261–1271. <https://doi.org/10.1080/02699931.2023.2252960>
- Geisler, F. C. M., Vennewald, N., Kubiak, T., & Weber, H. (2010). The impact of heart rate variability on subjective well-being is mediated by emotion regulation. *Personality and Individual Differences*, 49(7), 723–728. <https://doi.org/10.1016/j.paid.2010.06.015>
- Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods*, 19(1), 72–91. <https://doi.org/10.1037/a0032138>
- Geller, J., Cassin, S. E., Brown, K. E., & Srikameswaran, S. (2008). Factors associated with improvements in readiness for change: Low vs. normal BMI eating disorders. *International Journal of Eating Disorders*, 42(1), 40–46. <https://doi.org/10.1002/eat.20574>

- Geller, J., Iyar, M. M., Kelly, A. C., & Srikameswaran, S. (2019). Barriers to self-compassion in the eating disorders: The factor structure of the fear of self-compassion scale. *Eating Behaviors*, 35, 101334. <https://doi.org/10.1016/j.eatbeh.2019.101334>
- Geller, J., Kelly, A. C., Samson, L., Iyar, M. M., & Srikameswaran, S. (2020). The relation between two barriers to self-compassion and clinical characteristics in individuals with eating disorders. *European Eating Disorders Review*, 28(6), 766–772. <https://doi.org/10.1002/erv.2764>
- Gerber, Z., Tolmacz, R., & Doron, Y. (2015). Self-compassion and forms of concern for others. *Personality and Individual Differences*, 86, 394–400. <https://doi.org/10.1016/j.paid.2015.06.052>
- Germer, C. (2023). Self-compassion in psychotherapy: Clinical integration, evidence base, and mechanisms of change. In *Handbook of Self-Compassion* (pp. 379–415). Springer Nature.
- Gilbert, P. (1992). *Human nature and suffering*. Psychology Press.
- Gilbert, P. (2000a). Social mentalities: Internal "social" conflict and the role of inner warmth and compassion in cognitive therapy. In *Genes on the Couch: Explorations in Evolutionary Psychotherapy* (pp. 118–150). Brunner-Routledge.
- Gilbert, P. (2000b). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy*, 7(3), 174–189. [https://doi.org/10.1002/1099-0879\(200007\)7:3<174::aid-cpp236>3.0.co;2-u](https://doi.org/10.1002/1099-0879(200007)7:3<174::aid-cpp236>3.0.co;2-u)
- Gilbert, P. (2004). *Compassion: Conceptualisations, research and use in psychotherapy*. Routledge.
- Gilbert, P. (2007). The evolution of shame as a marker for relationship security. In *The Self-Conscious Emotions: Theory and Research* (pp. 283–309). Guilford Publications.

- Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment*, 15(3), 199–208. <https://doi.org/10.1192/apt.bp.107.005264>
- Gilbert, P. (2010). *Compassion focused therapy: Distinctive features*. Routledge.
- Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology*, 53(1), 6–41. <https://doi.org/10.1111/bjc.12043>
- Gilbert, P. (2015). An evolutionary approach to emotion in mental health with a focus on affiliative emotions. *Emotion Review*, 7(3), 230–237. <https://doi.org/10.1177/1754073915576552>
- Gilbert, P. (2020). Compassion: From its evolution to a psychotherapy. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.586161>
- Gilbert, P. (2022). Shame, humiliation, guilt, and social status. In *Compassion Focused Therapy: Clinical Practice and Applications* (pp. 122–163). Routledge.
- Gilbert, P. (2024). Threat, safety, safeness and social safeness 30 years on: Fundamental dimensions and distinctions for mental health and well-being. *British Journal of Clinical Psychology*, 63(3), 453–471. <https://doi.org/10.1111/bjc.12466>
- Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., Ceresatto, L., Duarte, J., Pinto-Gouveia, J., & Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care*, 4(1). <https://doi.org/10.1186/s40639-017-0033-3>
- Gilbert, P., & Irons, C. (2005). Focused therapies and compassionate mind training for shame and self-attacking. In *Compassion: Conceptualisations, Research and Use in Psychotherapy* (pp. 263–325). Routledge.

- Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice*, 84(3), 239–255. <https://doi.org/10.1348/147608310x526511>
- Gilbert, P., McEwan, K., Mitra, R., Franks, L., Richter, A., & Rockliff, H. (2008). Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism. *The Journal of Positive Psychology*, 3(3), 182–191. <https://doi.org/10.1080/17439760801999461>
- Gilbert, P., McEwan, K., Mitra, R., Richter, A., Franks, L., Mills, A., Bellew, R., & Gale, C. (2008). An exploration of different types of positive affect in students and patients with bipolar disorder. An exploration of different types of positive affect in students and patients with bipolar disorder. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*, 6(4), 135–143. <https://doi.org/10.1037/t86313-000>
- Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy*, 13(6), 353–379. <https://doi.org/10.1002/cpp.507>
- Gilmour, H. (2014). *Positive mental health and mental illness* (pp. 3–9). Statistics Canada. <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2014009/article/14086-eng.pdf?st=Xp4L11dc>
- Glisenti, K., Strodl, E., & King, R. (2023). The role of beliefs about emotions in emotion-focused therapy for binge-eating disorder. *Journal of Contemporary Psychotherapy*, 53(2), 117–124. <https://doi.org/10.1007/s10879-022-09555-6>
- Goss, K., & Allan, S. (2009). Shame, pride and eating disorders. *Clinical Psychology & Psychotherapy*, 16(4), 303–316. <https://doi.org/10.1002/cpp.627>

- Goss, K., & Allan, S. (2010). Compassion focused therapy for eating disorders. *International Journal of Cognitive Therapy*, 3(2), 141–158. <https://doi.org/10.1521/ijct.2010.3.2.141>
- Gracias, K. R., & Stutts, L. A. (2024). The impact of compassion writing interventions on body dissatisfaction, self-compassion, and fat phobia. *Mindfulness*, 15(7), 1793–1802. <https://doi.org/10.1007/s12671-024-02401-x>
- Greenberg, L. (2014). The therapeutic relationship in emotion-focused therapy. *Psychotherapy*, 51(3), 350–357. <https://doi.org/10.1037/a0037336>
- Greenberg, L. (2023). Changing emotion with emotion. *Person-Centered & Experiential Psychotherapies*, 22(4), 368–383. <https://doi.org/10.1080/14779757.2023.2234966>
- Greenberg, L. S. (2002). Integrating an emotion-focused approach to treatment into psychotherapy integration. *Journal of Psychotherapy Integration*, 12(2), 154–189. <https://doi.org/10.1037/1053-0479.12.2.154>
- Greenberg, L. S. (2021). Working with needs. In *Changing emotion with emotion: A practitioner's guide* (pp. 219–241). American Psychological Association (APA).
- Grey, W., Harris, E. A., & Griffiths, S. (2022). A randomized controlled trial of a brief self-compassion intervention designed to improve the body image of sexual minority men. *Body Image*, 42, 385–400. <https://doi.org/10.1016/j.bodyim.2022.07.001>
- Griffiths, P., Floden, E., Doll, H., Morris, M., & Hudgens, S. (2018, October). *Psychometric properties in the face of missing data: A simulation study assessing the effect of missing data on test-retest reliability in diary studies* [Poster presentation]. International Society for Quality of Life Research 25th Annual Conference, Dublin, Ireland. <https://www.clinoutsolutions.com/wp-content/uploads/2018/10/COS-poster-for-ISOQOL-PG-2018-v0.5.pdf>

- Griffiths, S., Harris, E. A., Whitehead, G., Angelopoulos, F., Stone, B., Grey, W., & Dennis, S. (2024). Does TikTok contribute to eating disorders? A comparison of the TikTok algorithms belonging to individuals with eating disorders versus healthy controls. *Body Image, 51*, 101807. <https://doi.org/10.1016/j.bodyim.2024.101807>
- Grisset, N. I., & Norvell, N. K. (1992). Perceived social support, social skills, and quality of relationships in bulimic women. *Journal of Consulting and Clinical Psychology, 60*(2), 293–299. <https://doi.org/10.1037/0022-006x.60.2.293>
- Hagan, K. E., & Walsh, B. T. (2021). State of the Art: The therapeutic approaches to bulimia nervosa. *Clinical Therapeutics, 43*(1), 40–49. <https://doi.org/10.1016/j.clinthera.2020.10.012>
- Hamatani, S., Tomotake, M., Takeda, T., Kameoka, N., Kawabata, M., Kubo, H., Tada, Y., Tomioka, Y., Watanabe, S., Inoshita, M., Kinoshita, M., Ohta, M., & Ohmori, T. (2017). Influence of cognitive function on quality of life in anorexia nervosa patients. *Psychiatry and Clinical Neurosciences, 71*(5), 328–335. <https://doi.org/10.1111/pcn.12491>
- Hambleton, A., Pepin, G., Le, A., Maloney, D., National Eating Disorder Research Consortium, Touyz, S., & Maguire, S. (2022). Psychiatric and medical comorbidities of eating disorders: Findings from a rapid review of the literature. *Journal of Eating Disorders, 10*(1). <https://doi.org/10.1186/s40337-022-00654-2>
- Harper, J. A., Brodrick, B., Van Enkevort, E., & McAdams, C. J. (2017). Neuropsychological and cognitive correlates of recovery in anorexia nervosa. *European Eating Disorders Review, 25*(6), 491–500. <https://doi.org/10.1002/erv.2539>
- Harrison, A., Al-Khairulla, H., & Kikoler, M. (2015). The feasibility, acceptability and possible benefit of a positive psychology intervention group in an adolescent inpatient eating

- disorder service. *The Journal of Positive Psychology*, 11(5), 449–459.
<https://doi.org/10.1080/17439760.2015.1117125>
- Harrison, A., Mountford, V. A., & Tchanturia, K. (2014). Social anhedonia and work and social functioning in the acute and recovered phases of eating disorders. *Psychiatry Research*, 218(1–2), 187–194. <https://doi.org/10.1016/j.psychres.2014.04.007>
- Hartmann, A., Zeeck, A., & Barrett, M. S. (2009). Interpersonal problems in eating disorders. *International Journal of Eating Disorders*, 43(7), 619–627.
<https://doi.org/10.1002/eat.20747>
- Hasper, R. E. H. (2023). *Psychoneuroimmunological benefits of self-compassion practices: A systematic review* (pp. 9–138) [Dissertation]. California Southern University.
- Hay, P., Chinn, D., Forbes, D., Madden, S., Newton, R., Sugenor, L., Touyz, S., & Ward, W. (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian & New Zealand Journal of Psychiatry*, 48(11), 977–1008. <https://doi.org/10.1177/0004867414555814>
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2011). *Acceptance and commitment therapy: The process and practice of mindful change*. Guilford Press.
- Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & et al. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, 64(6), 1152–1168.
<https://doi.org/10.1037//0022-006x.64.6.1152>
- Haynos, A. F., & Fruzzetti, A. E. (2011). Anorexia nervosa as a disorder of emotion dysregulation: Evidence and treatment implications. *Clinical Psychology: Science and Practice*, 18(3), 183–202. <https://doi.org/10.1111/j.1468-2850.2011.01250.x>

- Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, 110(1), 86–108. <https://doi.org/10.1037//0033-2909.110.1.86>
- Heffernan, M., Quinn Griffin, M. T., McNulty, S. R., & Fitzpatrick, J. J. (2010). Self-compassion and emotional intelligence in nurses. *International Journal of Nursing Practice*, 16(4), 366–373. <https://doi.org/10.1111/j.1440-172x.2010.01853.x>
- Hermanto, N., & Zuroff, D. C. (2016). The social mentality theory of self-compassion and self-reassurance: The interactive effect of care-seeking and caregiving. *The Journal of Social Psychology*, 156(5), 523–535. <https://doi.org/10.1080/00224545.2015.1135779>
- Hermanto, N., Zuroff, D. C., Kelly, A. C., & Leybman, M. J. (2017). Receiving support, giving support, and self-reassurance: A daily diary test of social mentality theory. *Personality and Individual Differences*, 107, 37–42. <https://doi.org/10.1016/j.paid.2016.11.013>
- Herron, S., & Trent, D. (2000). Mental health: A secondary concept to mental illness. *Journal of Public Mental Health*, 2(2), 29–38. <https://doi.org/10.1108/17465729200000014>
- Herzog, D. B., Norman, D. K., Rigotti, N. A., & PePOSE, M. (1986). Frequency of bulimic behaviors and associated social maladjustment in female graduate students. *Journal of Psychiatric Research*, 20(4), 355–361. [https://doi.org/10.1016/0022-3956\(86\)90038-5](https://doi.org/10.1016/0022-3956(86)90038-5)
- Hilbert, A., Hoek, H. W., & Schmidt, R. (2017). Evidence-based clinical guidelines for eating disorders. *Current Opinion in Psychiatry*, 30(6), 423–437. <https://doi.org/10.1097/ycp.0000000000000360>
- Holtkamp, K., Müller, B., Heussen, N., Remschmidt, H., & Herpertz-Dahlmann, B. (2005). Depression, anxiety, and obsessionality in long-term recovered patients with adolescent-onset anorexia nervosa. *European Child & Adolescent Psychiatry*, 14(2), 106–110. <https://doi.org/10.1007/s00787-005-0431-5>

- Homan, K. J., & Tylka, T. L. (2015). Self-compassion moderates body comparison and appearance self-worth's inverse relationships with body appreciation. *Body Image, 15*, 1–7. <https://doi.org/10.1016/j.bodyim.2015.04.007>
- Howgego, I. M., Yellowlees, P., Owen, C., Meldrum, L., & Dark, F. (2003). The therapeutic alliance: The key to effective patient outcome? A descriptive review of the evidence in community mental health case management. *Australian & New Zealand Journal of Psychiatry, 37*(2), 169–183. <https://doi.org/10.1046/j.1440-1614.2003.01131.x>
- Huemer, J., Haidvogel, M., Matzejat, F., Wagner, G., Nobis, G., Fernandez-Aranda, F., Collier, D. A., Treasure, J. L., & Karwautz, A. F. K. (2012). Perception of autonomy and connectedness prior to the onset of anorexia nervosa and bulimia nervosa. *Zeitschrift Für Kinder- Und Jugendpsychiatrie Und Psychotherapie, 40*(1), 61–68. <https://doi.org/10.1024/1422-4917/a000150>
- Huke, K., & Slade, P. (2006). An exploratory investigation of the experiences of partners living with people who have bulimia nervosa. *European Eating Disorders Review, 14*(6), 436–447. <https://doi.org/10.1002/erv.744>
- Huppert, F. A. (2005). Positive mental health in individuals and populations. In *The Science of Well-Being* (pp. 306–340). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198567523.003.0012>
- Iasiello, M., van Agteren, J., & Cochrane, E. M. (2020). Mental health and/or mental illness: A scoping review of the evidence and implications of the dual-continua model of mental health. *Evidence Base, 2020*(1), 1–45. <https://doi.org/10.21307/eb-2020-001>
- Jahoda, M. (1958). *Current concepts of positive mental health*. Basic Books/Bachette Book Group. <https://doi.org/10.1037/11258-000>

- Jansingh, A., Danner, U. N., Hoek, H. W., & van Elburg, A. A. (2020). Developments in the psychological treatment of anorexia nervosa and their implications for daily practice. *Current Opinion in Psychiatry*, 33(6), 534–541.
<https://doi.org/10.1097/ycp.0000000000000642>
- Jenkins, P. E., Hoste, R. R., Meyer, C., & Blissett, J. M. (2011). Eating disorders and quality of life: A review of the literature. *Clinical Psychology Review*, 31(1), 113–121.
<https://doi.org/10.1016/j.cpr.2010.08.003>
- Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy*, 44(9), 1301–1320.
<https://doi.org/10.1016/j.brat.2005.10.003>
- Kashdan, T. B., & McKnight, P. E. (2013). Commitment to a purpose in life: An antidote to the suffering by individuals with social anxiety disorder. *Emotion*, 13(6), 1150–1159.
<https://doi.org/10.1037/a0033278>
- Kass, A. E., Kolko, R. P., & Wilfley, D. E. (2013). Psychological treatments for eating disorders. *Current Opinion in Psychiatry*, 26(6), 549–555.
<https://doi.org/10.1097/ycp.0b013e328365a30e>
- Katan, A., & Kelly, A. C. (2021). A two-week daily diary study examining the association between daily self-compassion and symptoms of bulimia nervosa. *International Journal of Eating Disorders*, 54(8), 1438–1448. <https://doi.org/10.1002/eat.23533>
- Katan, A., & Kelly, A. C. (2023). A daily diary study of self-compassion and adaptive coping behaviours in women with symptoms of bulimia nervosa. *Journal of Eating Disorders*, 11, Article 50. <https://doi.org/10.1186/s40337-023-00755-6>

- Katan, A., Kelly, A. C., & Geller, J. (2024). Self-compassion promotes positive mental health in women with anorexia nervosa: A two-week daily diary study. *Eating Disorders: The Journal of Treatment and Prevention*, 33(2), 198–213.
<https://doi.org/10.1080/10640266.2024.2346373>
- Keel, P. K., Dorer, D. J., Eddy, K. T., Franko, D., Charatan, D. L., & Herzog, D. B. (2003). Predictors of mortality in eating disorders. *Archives of General Psychiatry*, 60(2), 179.
<https://doi.org/10.1001/archpsyc.60.2.179>
- Keel, P. K., & Klump, K. L. (2003). Are eating disorders culture-bound syndromes? Implications for conceptualizing their etiology. *Psychological Bulletin*, 129(5), 747–769.
<https://doi.org/10.1037/0033-2909.129.5.747>
- Keel, P. K., Mitchell, J. E., Miller, K. B., Davis, T. L., & Crow, S. J. (2000). Social adjustment over 10 years following diagnosis with bulimia nervosa. *International Journal of Eating Disorders*, 27(1), 21–28. [https://doi.org/10.1002/\(sici\)1098-108x\(200001\)27:1<21::aid-eat2>3.3.co;2-6](https://doi.org/10.1002/(sici)1098-108x(200001)27:1<21::aid-eat2>3.3.co;2-6)
- Kelly, A. C., & Carter, J. C. (2014). Self-compassion training for binge eating disorder: A pilot randomized controlled trial. *Psychology and Psychotherapy: Theory, Research and Practice*, 88(3), 285–303. <https://doi.org/10.1111/papt.12044>
- Kelly, A. C., Carter, J. C., Zuroff, D. C., & Borairi, S. (2013). Self-compassion and fear of self-compassion interact to predict response to eating disorders treatment: A preliminary investigation. *Psychotherapy Research*, 23(3), 252–264.
<https://doi.org/10.1080/10503307.2012.717310>
- Kelly, A. C., & Dupasquier, J. (2016). Social safeness mediates the relationship between recalled parental warmth and the capacity for self-compassion and receiving compassion.

Personality and Individual Differences, 89, 157–161.

<https://doi.org/10.1016/j.paid.2015.10.017>

Kelly, A. C., & Stephen, E. (2016). A daily diary study of self-compassion, body image, and eating behavior in female college students. *Body Image*, 17, 152–160.

<https://doi.org/10.1016/j.bodyim.2016.03.006>

Kelly, A. C., & Tasca, G. A. (2016). Within-persons predictors of change during eating disorders treatment: An examination of self-compassion, self-criticism, shame, and eating disorder symptoms. *International Journal of Eating Disorders*, 49(7), 716–722.

<https://doi.org/10.1002/eat.22527>

Kelly, A. C., Vimalakanthan, K., & Carter, J. C. (2014). Understanding the roles of self-esteem, self-compassion, and fear of self-compassion in eating disorder pathology: An examination of female students and eating disorder patients. *Eating Behaviors*, 15(3), 388–391. <https://doi.org/10.1016/j.eatbeh.2014.04.008>

Kelly, A. C., & Waring, S. V. (2018). A feasibility study of a 2-week self-compassionate letter-writing intervention for nontreatment seeking individuals with typical and atypical anorexia nervosa. *International Journal of Eating Disorders*, 51(8), 1005–1009.

<https://doi.org/10.1002/eat.22930>

Kelly, A. C., Waring, S. V., & Dupasquier, J. R. (2019). Most women with anorexia nervosa report less eating pathology on days when they are more self-compassionate than usual. *International Journal of Eating Disorders*, 53(1), 133–137.

<https://doi.org/10.1002/eat.23185>

Kelly, A. C., Wisniewski, L., Martin-Wagar, C., & Hoffman, E. (2016). Group-Based compassion-focused therapy as an adjunct to outpatient treatment for eating disorders: A

- pilot randomized controlled trial. *Clinical Psychology & Psychotherapy*, 24(2), 475–487.
<https://doi.org/10.1002/cpp.2018>
- Kelly, A. C., Zuroff, D. C., Leybman, M. J., & Gilbert, P. (2012). Social safeness, received social support, and maladjustment: Testing a tripartite model of affect regulation. *Cognitive Therapy and Research*, 36(6), 815–826. <https://doi.org/10.1007/s10608-011-9432-5>
- Kelly, A., Katan, A., Sosa Hernandez, L., Nightingale, B., & Geller, J. (2020). Why would I want to be more self-compassionate? A qualitative study of the pros and cons to cultivating self-compassion in individuals with anorexia nervosa. *British Journal of Clinical Psychology*, 60(1), 99–115. <https://doi.org/10.1111/bjc.12275>
- Kenny, T. E., Boyle, S. L., & Lewis, S. P. (2019). #recovery: Understanding recovery from the lens of recovery-focused blogs posted by individuals with lived experience. *International Journal of Eating Disorders*, 53(8), 1234–1243. <https://doi.org/10.1002/eat.23221>
- Kenny, T. E., & Lewis, S. P. (2023). More than an outcome: A person-centered, ecological framework for eating disorder recovery. *Journal of Eating Disorders*, 11(1).
<https://doi.org/10.1186/s40337-023-00768-1>
- Kerem, N. C., & Katzman, D. K. (2003). Brain structure and function in adolescents with anorexia nervosa. *Adolescent Medicine*, 14(1), 109–119.
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207. <https://doi.org/10.2307/3090197>
- Keyes, C. L. M. (2005). Mental illness and/or Mental Health? Investigating Axioms of the Complete State Model of Health. *Journal of Consulting and Clinical Psychology*, 73(3), 539–548. <https://doi.org/10.1037/0022-006x.73.3.539>

- Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the mental health continuum–short form (MHC–SF) in setswana-speaking South Africans. *Clinical Psychology & Psychotherapy*, 15(3), 181–192.
<https://doi.org/10.1002/cpp.572>
- Kirby, J. N., Doty, J. R., Petrocchi, N., & Gilbert, P. (2017). The current and future role of heart rate variability for assessing and training compassion. *Frontiers in Public Health*, 5, Article 40. <https://doi.org/10.3389/fpubh.2017.00040>
- Kirschner, H., Kuyken, W., Wright, K., Roberts, H., Brejcha, C., & Karl, A. (2019). Soothing your heart and feeling connected: A new experimental paradigm to study the benefits of self-compassion. *Clinical Psychological Science*, 7(3), 545–565.
<https://doi.org/10.1177/2167702618812438>
- Kitsantas, A., Gilligan, T. D., & Kamata, A. (2003). College women with eating disorders: Self-Regulation, life satisfaction, and positive/negative affect. *The Journal of Psychology*, 137(4), 381–395. <https://doi.org/10.1080/00223980309600622>
- Klump, K. L., Bulik, C. M., Kaye, W. H., Treasure, J., & Tyson, E. (2008). Academy for eating disorders position paper: Eating disorders are serious mental illnesses. *International Journal of Eating Disorders*, 42(2), 97–103. <https://doi.org/10.1002/eat.20589>
- Kontis, D., & Theochari, E. (2012). Dopamine in anorexia nervosa. *Behavioural Pharmacology*, 23(5 and 6), 496–515. <https://doi.org/10.1097/fbp.0b013e328357e115>
- Koole, S. L., van Dillen, L. F., & Sheppes, G. (2010). The self-regulation of emotion. In *Handbook of Self-Regulation, Second Edition: Research, Theory, and Applications* (pp. 22–40). Guilford Press.

- Kotsou, I., & Leys, C. (2016). Self-Compassion Scale (SCS): Psychometric properties of the French translation and its relations with psychological well-being, affect and depression. *PLOS ONE*, *11*(4), e0152880. <https://doi.org/10.1371/journal.pone.0152880>
- Krug, I., King, R. M., Youssef, G. J., Sorabji, A., Wertheim, E. H., Le Grange, D., Hughes, E. K., Letcher, P., & Olsson, C. A. (2016). The effect of low parental warmth and low monitoring on disordered eating in mid-adolescence: Findings from the Australian Temperament Project. *Appetite*, *105*, 232–241. <https://doi.org/10.1016/j.appet.2016.05.015>
- Lathren, C. R., Rao, S. S., Park, J., & Bluth, K. (2021). Self-compassion and current close interpersonal relationships: A scoping literature review. *Mindfulness*, *12*(5), 1078–1093. <https://doi.org/10.1007/s12671-020-01566-5>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Le Grange, D., Crosby, R. D., Rathouz, P. J., & Leventhal, B. L. (2007). A randomized controlled comparison of family-based treatment and supportive psychotherapy for adolescent bulimia nervosa. *Archives of General Psychiatry*, *64*(9), 1049. <https://doi.org/10.1001/archpsyc.64.9.1049>
- Le Grange, D. L., Lock, J., & Dymek, M. (2003). Family-Based therapy for adolescents with bulimia nervosa. *American Journal of Psychotherapy*, *57*(2), 237–251. <https://doi.org/10.1176/appi.psychotherapy.2003.57.2.237>
- Le Grange, D., Lock, J., Agras, W. S., Bryson, S. W., & Jo, B. (2015). Randomized clinical trial of family-based treatment and cognitive-behavioral therapy for adolescent bulimia

- nervosa. *Journal of the American Academy of Child & Adolescent Psychiatry*, 54(11), 886-894.e2. <https://doi.org/10.1016/j.jaac.2015.08.008>
- Lee, V., & Hoaken, P. N. S. (2007). Cognition, emotion, and neurobiological development: Mediating the relation between maltreatment and aggression. *Child Maltreatment*, 12(3), 281–298. <https://doi.org/10.1177/1077559507303778>
- Levine, M. P. (2012). Loneliness and eating disorders. *The Journal of Psychology*, 146(1–2), 243–257. <https://doi.org/10.1080/00223980.2011.606435>
- Li, Y., Deng, J., Lou, X., Wang, H., & Wang, Y. (2019). A daily diary study of the relationships among daily self-compassion, perceived stress and health-promoting behaviours. *International Journal of Psychology*, 55(3), 364–372. <https://doi.org/10.1002/ijop.12610>
- Limbert, C. (2010). Perceptions of social support and eating disorder characteristics. *Health Care for Women International*, 31(2), 170–178. <https://doi.org/10.1080/07399330902893846>
- Linardon, J., Fairburn, C. G., Fitzsimmons-Craft, E. E., Wilfley, D. E., & Brennan, L. (2017). The empirical status of the third-wave behaviour therapies for the treatment of eating disorders: A systematic review. *Clinical Psychology Review*, 58, 125–140. <https://doi.org/10.1016/j.cpr.2017.10.005>
- Linardon, J., Gleeson, J., Yap, K., Murphy, K., & Brennan, L. (2019). Meta-analysis of the effects of third-wave behavioural interventions on disordered eating and body image concerns: Implications for eating disorder prevention. *Cognitive Behaviour Therapy*, 48(1), 15–38. <https://doi.org/10.1080/16506073.2018.1517389>
- Linardon, J., & Messer, M. (2022). Reciprocal associations between self-compassion and eating disorder symptoms: An 8-month longitudinal study. *Mindfulness*, 14(1), 141–147. <https://doi.org/10.1007/s12671-022-02031-1>

- Linehan, M. (2014). *DBT Skills training manual, second edition*. Guilford Publications.
- Ling, Y., Rascati, K. L., & Pawaskar, M. (2016). Direct and indirect costs among patients with binge-eating disorder in the United States. *International Journal of Eating Disorders*, 50(5), 523–532. <https://doi.org/10.1002/eat.22631>
- Linville, D., Brown, T., Sturm, K., & McDougal, T. (2012). Eating disorders and social support: Perspectives of recovered individuals. *Eating Disorders*, 20(3), 216–231. <https://doi.org/10.1080/10640266.2012.668480>
- Liu, Y., Yang, X., Liu, Y., Wei, C., Zhao, J., & Kong, F. (2024). Bidirectional relationship between self-compassion and psychological richness: A two-wave longitudinal study. *Applied Psychology: Health and Well-Being*, 17(1). <https://doi.org/10.1111/aphw.12607>
- Lock, J., & Grange, D. L. (2012). *Treatment manual for anorexia nervosa, second edition: A family-based approach*. Guilford Press.
- Lock, J., Le Grange, D., Agras, W. S., Moye, A., Bryson, S. W., & Jo, B. (2010). Randomized clinical trial comparing family-based treatment with adolescent-focused individual therapy for adolescents with anorexia nervosa. *Archives of General Psychiatry*, 67(10), 1025. <https://doi.org/10.1001/archgenpsychiatry.2010.128>
- Lonergan, A. R., Bussey, K., Mond, J., Brown, O., Griffiths, S., Murray, S. B., & Mitchison, D. (2019). Me, my selfie, and I: The relationship between editing and posting selfies and body dissatisfaction in men and women. *Body Image*, 28, 39–43. <https://doi.org/10.1016/j.bodyim.2018.12.001>
- Luyten, P., Sabbe, B., Blatt, S. J., Meganck, S., Jansen, B., De Grave, C., Maes, F., & Corveleyn, J. (2007). Dependency and self-criticism: Relationship with major depressive disorder,

- severity of depression, and clinical presentation. *Depression and Anxiety*, 24(8), 586–596. <https://doi.org/10.1002/da.20272>
- Lydecker, J. A., Riley, K. E., & Grilo, C. M. (2018). Associations of parents’ self, child, and other “fat talk” with child eating behaviors and weight. *International Journal of Eating Disorders*, 51(6), 527–534. <https://doi.org/10.1002/eat.22858>
- Ma, R., & Kelly, A. C. (2019). The fragility of perceived social rank following exercise in anorexia nervosa: An ecological momentary assessment study of shame and pride. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 25(6), 1601–1607. <https://doi.org/10.1007/s40519-019-00797-3>
- Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 85–91. <https://doi.org/10.1027/1614-2241.1.3.85>
- Makri, E., Michopoulos, I., & Gonidakis, F. (2022). Investigation of loneliness and social support in patients with eating disorders: A case-control study. *Psychiatry International*, 3(2), 142–157. <https://doi.org/10.3390/psychiatryint3020012>
- Marta-Simões, J., Ferreira, C., & Mendes, A. L. (2016). Self-compassion: An adaptive link between early memories and women’s quality of life. *Journal of Health Psychology*, 23(7), 929–938. <https://doi.org/10.1177/1359105316656771>
- Marta-Simões, J., Ferreira, C., & Mendes, A. L. (2017). Shame and depression: The roles of self-reassurance and social safeness. *European Psychiatry*, 41(S1), s241–s241. <https://doi.org/10.1016/j.eurpsy.2017.02.012>
- Martinussen, M., Friberg, O., Schmierer, P., Kaiser, S., Øvergård, K. T., Neunhoeffter, A.-L., Martinsen, E. W., & Rosenvinge, J. H. (2016). The comorbidity of personality disorders

- in eating disorders: A meta-analysis. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 22(2), 201–209. <https://doi.org/10.1007/s40519-016-0345-x>
- Matos, M., Duarte, J., & Pinto-Gouveia, J. (2017). The origins of fears of compassion: Shame and lack of safeness memories, fears of compassion and psychopathology. *The Journal of Psychology*, 151(8), 804–819. <https://doi.org/10.1080/00223980.2017.1393380>
- Matos, M., Petrocchi, N., Irons, C., & Steindl, S. R. (2022). Never underestimate fears, blocks, and resistances: The interplay between experiential practices, self-conscious emotions, and the therapeutic relationship in compassion focused therapy. *Journal of Clinical Psychology*, 79(7), 1670–1685. <https://doi.org/10.1002/jclp.23474>
- Matos, M., Pinto-Gouveia, J., & Duarte, C. (2013). Internalizing early memories of shame and lack of safeness and warmth: The mediating role of shame on depression. *Behavioural and Cognitive Psychotherapy*, 41(4), 479–493. <https://doi.org/10.1017/s1352465812001099>
- Matusitz, J., & Martin, J. (2013). The application of self-determination theory to eating disorders. *Journal of Creativity in Mental Health*, 8(4), 499–517. <https://doi.org/10.1080/15401383.2013.850392>
- Maxfield, M., Li, X., & Widom, C. S. (2023). Childhood maltreatment and midlife cognitive functioning: A longitudinal study of the roles of social support and social isolation. *Neuropsychology*, 37(8), 943–954. <https://doi.org/10.1037/neu0000911>
- Maziriri, E. T., Nyagadza, B., Mapuranga, M., & Maramura, T. C. (2022). Habitual Facebook use as a prognosticator for life satisfaction and psychological well-being: Social safeness as a moderator. *Arab Gulf Journal of Scientific Research*, 40(2), 153–179. <https://doi.org/10.1108/agjsr-04-2022-0011>

- Mazurek, M. O. (2013). Loneliness, friendship, and well-being in adults with autism spectrum disorders. *Autism, 18*(3), 223–232. <https://doi.org/10.1177/1362361312474121>
- McDonald, S., Williams, A. J., Barr, P., McNamara, N., & Marriott, M. (2021). Service user and eating disorder therapist views on anorexia nervosa recovery criteria. *Psychology and Psychotherapy: Theory, Research and Practice, 94*(3), 721–736. <https://doi.org/10.1111/papt.12340>
- McEwan, K., & Gilbert, P. (2015). A pilot feasibility study exploring the practising of compassionate imagery exercises in a nonclinical population. *Psychology and Psychotherapy: Theory, Research and Practice, 89*(2), 239–243. <https://doi.org/10.1111/papt.12078>
- McIntosh, V. V., Bulik, C. M., McKenzie, J. M., Luty, S. E., & Jordan, J. (2000). Interpersonal psychotherapy for anorexia nervosa. *International Journal of Eating Disorders, 27*(2), 125–139. [https://doi.org/10.1002/\(sici\)1098-108x\(200003\)27:2<125::aid-eat1>3.0.co;2-4](https://doi.org/10.1002/(sici)1098-108x(200003)27:2<125::aid-eat1>3.0.co;2-4)
- Merritt, O. A., & Purdon, C. (2021). Fear of compassion is associated with treatment ambivalence and negative expectations for treatment in people with anxiety. *British Journal of Clinical Psychology, 60*(4), 546–555. <https://doi.org/10.1111/bjc.12313>
- Mey, L. K., Wenzel, M., Morello, K., Rowland, Z., Kubiak, T., & Tüscher, O. (2023). Be kind to yourself: The implications of momentary self-compassion for affective dynamics and well-being in daily life. *Mindfulness, 14*(3), 622–636. <https://doi.org/10.1007/s12671-022-02050-y>
- Micali, N., Martini, M. G., Thomas, J. J., Eddy, K. T., Kothari, R., Russell, E., Bulik, C. M., & Treasure, J. (2017). Lifetime and 12-month prevalence of eating disorders amongst

- women in mid-life: A population-based study of diagnoses and risk factors. *BMC Medicine*, 15(1). <https://doi.org/10.1186/s12916-016-0766-4>
- Millard, L. A., Wan, M. W., Smith, D. M., & Wittkowski, A. (2023). The effectiveness of compassion focused therapy with clinical populations: A systematic review and meta-analysis. *Journal of Affective Disorders*, 326, 168–192.
<https://doi.org/10.1016/j.jad.2023.01.010>
- Miller, K., & Kelly, A. (2020). Is self-compassion contagious? An examination of whether hearing a display of self-compassion impacts self-compassion in the listener. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 52(2), 159–170. <https://doi.org/10.1037/cbs0000150>
- Miller, K., Kelly, A., & Stephen, E. (2019). Exposure to body focused and non-body focused others over a week: A preliminary investigation of their unique contributions to college women's eating and body image. *Body Image*, 28, 44–52.
<https://doi.org/10.1016/j.bodyim.2018.12.003>
- Miskovic-Wheatley, J., Bryant, E., Ong, S. H., Vatter, S., Le, A., National Eating Disorder Research Consortium, Touyz, S., & Maguire, S. (2023). Eating disorder outcomes: Findings from a rapid review of over a decade of research. *Journal of Eating Disorders*, 11(1). <https://doi.org/10.1186/s40337-023-00801-3>
- Mitchell, J. E., & Crow, S. (2006). Medical complications of anorexia nervosa and bulimia nervosa. *Current Opinion in Psychiatry*, 19(4), 438–443.
<https://doi.org/10.1097/01.yco.0000228768.79097.3e>

- Mitchison, D., Dawson, L., Hand, L., Mond, J., & Hay, P. (2016). Quality of life as a vulnerability and recovery factor in eating disorders: A community-based study. *BMC Psychiatry*, 16(1). <https://doi.org/10.1186/s12888-016-1033-0>
- Modica, C. (2019). Facebook, body esteem, and body surveillance in adult women: The moderating role of self-compassion and appearance-contingent self-worth. *Body Image*, 29, 17–30. <https://doi.org/10.1016/j.bodyim.2019.02.002>
- Moffitt, R. L., Neumann, D. L., & Williamson, S. P. (2018). Comparing the efficacy of a brief self-esteem and self-compassion intervention for state body dissatisfaction and self-improvement motivation. *Body Image*, 27, 67–76. <https://doi.org/10.1016/j.bodyim.2018.08.008>
- Mohammadpoor Faskhodi, M., Fernández-Chimeno, M., & García-González, M. A. (2023). Arousal detection by using ultra-short-term heart rate variability (HRV) analysis. *Frontiers in Medical Engineering*, 1. <https://doi.org/10.3389/fmede.2023.1209252>
- Mongrain, M., Chin, J. M., & Shapira, L. B. (2010). Practicing compassion increases happiness and self-esteem. *Journal of Happiness Studies*, 12(6), 963–981. <https://doi.org/10.1007/s10902-010-9239-1>
- Montero-Marín, J., Gaete, J., Demarzo, M., Rodero, B., Lopez, L. C. S., & García-Campayo, J. (2016). Self-criticism: A measure of uncompassionate behaviors toward the self, based on the negative components of the self-compassion scale. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.01281>
- Mühlau, M., M. D., Gaser, C., Ph. D., Ilg, R., M. D., Conrad, B., M. D., Leibl, C., M. D., Cebulla, M. H., Ph. D., Backmund, H., M. D., Gerlinghoff, M., M. D., Lommer, P., Dipl.-Soz., Schnebel, A., Dipl.-Psyc, Wohlschläger, A. M., Ph. D., Zimmer, C., M. D., &

- Nunnemann, S., M. D. (2007). Gray matter decrease of the anterior cingulate cortex in anorexia nervosa. *American Journal of Psychiatry*, 164(12), 1850–1857.
<https://doi.org/10.1176/appi.ajp.2007.06111861>
- Müller, L. E., Bertsch, K., Bülow, K., Herpertz, S. C., & Buchheim, A. (2019). Emotional neglect in childhood shapes social dysfunctioning in adults by influencing the oxytocin and the attachment system: Results from a population-based study. *International Journal of Psychophysiology*, 136, 73–80. <https://doi.org/10.1016/j.ijpsycho.2018.05.011>
- Muratore, A. F., & Attia, E. (2021). Current therapeutic approaches to anorexia nervosa: State of the art. *Clinical Therapeutics*, 43(1), 85–94.
<https://doi.org/10.1016/j.clinthera.2020.11.006>
- Muris, P., & Otgaar, H. (2020). The process of science: A critical evaluation of more than 15 years of research on self-compassion with the Self-Compassion Scale. *Mindfulness*, 11(6), 1469–1482. <https://doi.org/10.1007/s12671-020-01363-0>
- Muris, P., Otgaar, H., & Petrocchi, N. (2016). Protection as the mirror image of psychopathology: Further critical notes on the self-compassion scale. *Mindfulness*, 7(3), 787–790. <https://doi.org/10.1007/s12671-016-0509-9>
- Muris, P., van den Broek, M., Otgaar, H., Oudenhoven, I., & Lennartz, J. (2018). Good and bad sides of self-compassion: A face validity check of the Self-Compassion Scale and an investigation of its relations to coping and emotional symptoms in non-clinical adolescents. *Journal of Child and Family Studies*, 27(8), 2411–2421.
<https://doi.org/10.1007/s10826-018-1099-z>
- Musić, S., Elwyn, R., Fountas, G., Gnatt, I., Jenkins, Z. M., Malcolm, A., Miles, S., Neill, E., Simpson, T., Yolland, C. O., & Phillipou, A. (2021). Valuing the voice of lived

- experience of eating disorders in the research process: Benefits and considerations. *Australian & New Zealand Journal of Psychiatry*, 56(3), 216–218.
<https://doi.org/10.1177/0004867421998794>
- National Initiative for Eating Disorders. (2017). *Canadian Research on Eating Disorders*.
 National Initiative for Eating Disorders (NIED). <https://www.nied.ca/research>
- National Institute for Health and Care Excellence (NICE). (2020). *Eating disorders: Recognition and treatment – Nice Guideline*. <https://www.nice.org.uk/guidance/ng69>
- Neff, K. D. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2(2), 85–101. <https://doi.org/10.1080/15298860309032>
- Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223–250. <https://doi.org/10.1080/15298860309027>
- Neff, K. D. (2016). Does self-compassion entail reduced self-judgment, isolation, and over-identification? A response to Muris, Otgaar, and Petrocchi (2016). *Mindfulness*, 7(3), 791–797. <https://doi.org/10.1007/s12671-016-0531-y>
- Neff, K. D. (2023). Self-Compassion: Theory, method, research, and intervention. *Annual Review of Psychology*, 74(1), 193–218. <https://doi.org/10.1146/annurev-psych-032420-031047>
- Neff, K. D., Bluth, K., Tóth-Király, I., Davidson, O., Knox, M. C., Williamson, Z., & Costigan, A. (2020). Development and validation of the Self-Compassion Scale for youth. *Journal of Personality Assessment*, 103(1), 92–105.
<https://doi.org/10.1080/00223891.2020.1729774>

- Neff, K. D., Hsieh, Y.-P., & Dejjitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity*, 4(3), 263–287.
<https://doi.org/10.1080/13576500444000317>
- Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality*, 41(1), 139–154.
<https://doi.org/10.1016/j.jrp.2006.03.004>
- Neff, K. D., Long, P., Knox, M. C., Davidson, O., Kuchar, A., Costigan, A., Williamson, Z., Rohleder, N., Tóth-Király, I., & Breines, J. G. (2018). The forest and the trees: Examining the association of self-compassion and its positive and negative components with psychological functioning. *Self and Identity*, 17(6), 627–645.
<https://doi.org/10.1080/15298868.2018.1436587>
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality*, 41(4), 908–916. <https://doi.org/10.1016/j.jrp.2006.08.002>
- Neff, K. D., Tóth-Király, I., Knox, M. C., Kuchar, A., & Davidson, O. (2021). The development and validation of the State Self-Compassion Scale (long- and short form). *Mindfulness*, 12(1), 121–140. <https://doi.org/10.1007/s12671-020-01505-4>
- Neff, K. D., Tóth-Király, I., Yarnell, L. M., Arimitsu, K., Castilho, P., Ghorbani, N., Guo, H. X., Hirsch, J. K., Hupfeld, J., Hutz, C. S., Kotsou, I., Lee, W. K., Montero-Marin, J., Sirois, F. M., de Souza, L. K., Svendsen, J. L., Wilkinson, R. B., & Mantzios, M. (2019). Examining the factor structure of the Self-Compassion Scale in 20 diverse samples: Support for use of a total score and six subscale scores. *Psychological Assessment*, 31(1), 27–45. <https://doi.org/10.1037/pas0000629>

Nguyen, L., Phillips, C. V., Rodriguez, A., Young, A. R., & Ramdass, J. V. (2022).

Relationships matter! Social safeness and self-disclosure may influence the relationship between perceived social support and well-being for in-person and online relationships.

Journal of Applied Social Psychology, 52(12), 1211–1220.

<https://doi.org/10.1111/jasp.12921>

Noordenbos, G., & Seubring, A. (2006). Criteria for recovery from eating disorders according to patients and therapists. *Eating Disorders*, 14(1), 41–54.

<https://doi.org/10.1080/10640260500296756>

Nunez, N. (2019). *Social connectedness and eating disorder symptomatology* (pp. 3–1) [Honours Thesis, University of Albany- State University of New York]. Scholars Archive.

https://scholarsarchive.library.albany.edu/honorscollege_psych/38/

Oliveira, S., Cunha, M., Rosado, A., & Ferreira, C. (2022). Compassionate coach and psychological quality of life in Portuguese athletes: Effect of mediating variables.

Journal of Clinical Sport Psychology, 16(2), 182–198. <https://doi.org/10.1123/jcsp.2020-0058>

O'Mahony, J. F., & Hollwey, S. (1995). Eating problems and interpersonal functioning among several groups of women. *Journal of Clinical Psychology*, 51(3), 345–351.

[https://doi.org/10.1002/1097-4679\(199505\)51:3<345::aid-jclp2270510305>3.0.co;2-a](https://doi.org/10.1002/1097-4679(199505)51:3<345::aid-jclp2270510305>3.0.co;2-a)

Ontario Health. (2023a). *Clinically appropriate use of virtual care for eating disorders*.

<https://www.ontariohealth.ca/sites/ontariohealth/files/Clinically-Appropriate-Use-Virtual-Care-Eating-Disorders.pdf>

- Ontario Health. (2023b). *Eating disorders quality standard: Care for people of all ages*.
<https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-eating-disorders-quality-standard-en.pdf>
- Öst, L., Brattmyr, M., Finnes, A., Ghaderi, A., Havnen, A., Hedman-Lagerlöf, M., Parling, T., Welch, E., & Wergeland, G. J. (2023). Cognitive behavior therapy for adult eating disorders in routine clinical care: A systematic review and meta-analysis. *International Journal of Eating Disorders*, 57(2), 249–264. <https://doi.org/10.1002/eat.24104>
- Panaite, V., & Cohen, N. (2023). The divide between daily event appraisal and emotion experience in major depression. *Cognition and Emotion*, 37(3), 586–594.
<https://doi.org/10.1080/02699931.2023.2205630>
- Panayiotou, G., Karekla, M., & Mete, I. (2014). Dispositional coping in individuals with anxiety disorder symptomatology: Avoidance predicts distress. *Journal of Contextual Behavioral Science*, 3(4), 314–321. <https://doi.org/10.1016/j.jcbs.2014.07.001>
- Paranjothy, S. M., & Wade, T. D. (2024). A meta-analysis of disordered eating and its association with self-criticism and self-compassion. *International Journal of Eating Disorders*, 57(3), 473–536. <https://doi.org/10.1002/eat.24166>
- Parkinson, B., Briner, R. B., Reynolds, S., & Totterdell, P. (1995). Time frames for mood: Relations between momentary and generalized ratings of affect. *Personality and Social Psychology Bulletin*, 21(4), 331–339. <https://doi.org/10.1177/0146167295214003>
- Parks, A. C., & Biswas-Diener, R. (2013). Positive interventions: Past, present, and future. . In *Mindfulness, Acceptance, and Positive Psychology: The Seven Foundations of Well-Being*. New Harbinger Publications.
- Paul, G. (2019). *Living like crazy* (2nd ed.). Routledge.

- Pauli, D., Aebi, M., Winkler Metzke, C., & Steinhausen, H.-C. (2017). Motivation to change, coping, and self-esteem in adolescent anorexia nervosa: A validation study of the Anorexia Nervosa Stages of Change Questionnaire (ANSOCQ). *Journal of Eating Disorders*, 5(1). <https://doi.org/10.1186/s40337-016-0125-z>
- Penwell, T. E., Spoor, S., Eyre, R., & Levinson, C. A. (2023). *Eating disorder treatment access climate assessment in the United States: Perceived inequities among reported treatment seekers*. Center for Open Science. <https://doi.org/10.31219/osf.io/bn78p>
- Perthes, K., Kirschbaum-Lesch, I., Legenbauer, T., Holtmann, M., Hammerle, F., & Kolar, D. R. (2021). Emotion regulation in adolescents with anorexia and bulimia nervosa: Differential use of adaptive and maladaptive strategies compared to healthy adolescents. *International Journal of Eating Disorders*, 54(12), 2206–2212. <https://doi.org/10.1002/eat.23608>
- Pinto, C., Ferreira, C., Mendes, A. L., & Trindade, I. A. (2017). Social safeness and disordered eating: Exploring underlying mechanisms of body appreciation and inflexible eating. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 22(2), 303–309. <https://doi.org/10.1007/s40519-017-0384-y>
- Pinto-Gouveia, J., Ferreira, C., & Duarte, C. (2012). Thinness in the pursuit for social safeness: An integrative model of social rank mentality to explain eating psychopathology. *Clinical Psychology & Psychotherapy*, 21(2), 154–165. <https://doi.org/10.1002/cpp.1820>
- Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, 74(2), 116–143. <https://doi.org/10.1016/j.biopsycho.2006.06.009>

- Prefit, A.-B., Căndea, D. M., & Szentagotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite, 143*, 104438.
<https://doi.org/10.1016/j.appet.2019.104438>
- Pullmer, R., Coelho, J. S., & Zaitsoff, S. L. (2019). Kindness begins with yourself: The role of self-compassion in adolescent body satisfaction and eating pathology. *International Journal of Eating Disorders, 52*(7), 809–816. <https://doi.org/10.1002/eat.23081>
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy, 18*(3), 250–255. <https://doi.org/10.1002/cpp.702>
- Rahimi-Ardabili, H., Reynolds, R., Vartanian, L. R., McLeod, L. V. D., & Zwar, N. (2017). A systematic review of the efficacy of interventions that aim to increase self-compassion on nutrition habits, eating behaviours, body weight and body image. *Mindfulness, 9*(2), 388–400. <https://doi.org/10.1007/s12671-017-0804-0>
- Rajendra Acharya, U., Paul Joseph, K., Kannathal, N., Lim, C. M., & Suri, J. S. (2006). Heart rate variability: A review. *Medical & Biological Engineering & Computing, 44*(12), 1031–1051. <https://doi.org/10.1007/s11517-006-0119-0>
- Redden, E. K., Bailey, H. N., Katan, A., Kondo, D., Czosniak, R., Upfold, C., & Newby-Clark, I. R. (2021). Evidence for self-compassionate talk: What do people actually say? *Current Psychology, 42*(1), 748–764. <https://doi.org/10.1007/s12144-020-01339-2>
- Roberto, C. A., Mayer, L. E. S., Brickman, A. M., Barnes, A., Muraskin, J., Yeung, L., Steffener, J., Sy, M., Hirsch, J., Stern, Y., & Walsh, B. T. (2011). Brain tissue volume changes following weight gain in adults with anorexia nervosa. *International Journal of Eating Disorders, 44*(5), 406–411. <https://doi.org/10.1002/eat.20840>

- Roberts, B. W. (2017). A revised sociogenomic model of personality traits. *Journal of Personality*, 86(1), 23–35. <https://doi.org/10.1111/jopy.12323>
- Roberts, M. E., Tchanturia, K., Stahl, D., Southgate, L., & Treasure, J. (2007). A systematic review and meta-analysis of set-shifting ability in eating disorders. *Psychological Medicine*, 37(8), 1075–1084. <https://doi.org/10.1017/s0033291707009877>
- Robinson, P. H., Kukucska, R., Guidetti, G., & Leavey, G. (2015). Severe and enduring anorexia nervosa (SEED-AN): A qualitative study of patients with 20+ years of anorexia nervosa. *European Eating Disorders Review*, 23(4), 318–326. <https://doi.org/10.1002/erv.2367>
- Rockliff, H., Gilbert, P., McEwan, K., Lightman, S., & Glover, D. (2008). A pilot exploration of heart rate variability and salivary Cortisol responses to compassion-focused imagery. *Clinical Neuropsychiatry*, 5(3), 132–139.
- Rorty, M., Yager, J., Buckwalter, J. G., & Rossotto, E. (1999). Social support, social adjustment, and recovery status in bulimia nervosa. *International Journal of Eating Disorders*, 26(1), 1–12. [https://doi.org/10.1002/\(sici\)1098-108x\(199907\)26:1<1::aid-eat1>3.0.co;2-i](https://doi.org/10.1002/(sici)1098-108x(199907)26:1<1::aid-eat1>3.0.co;2-i)
- Ruscitti, C., Rufino, K., Goodwin, N., & Wagner, R. (2016). Difficulties in emotion regulation in patients with eating disorders. *Borderline Personality Disorder and Emotion Dysregulation*, 3(1). <https://doi.org/10.1186/s40479-016-0037-1>
- Ryan, L., Bore, M., Dyer, S., & Nevile, D. (2015). CBT-E informed practice in an adult outpatient service: How effective is it in a real world setting? *Journal of Eating Disorders*, 3(S1). <https://doi.org/10.1186/2050-2974-3-s1-o2>
- Ryan, R. M., & Deci, E. L. (2008). Self-determination theory and the role of basic psychological needs in personality and the organization of behavior. In O. P. John, R. W. Robins, & L.

- A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 654–678). The Guilford Press.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
- Salzberg, S. (2009). Forward. In *The Mindful Path to Self-Compassion: Freeing Yourself from Destructive Thoughts and Emotions*. Guilford Press.
- Sartorius, N. (2001). Reducing the social and economic burdens of depression. *Journal of Clinical Psychiatry*, 62, 8–11.
- Satici, S. A., Uysal, R., Yilmaz, M. F., & Deniz, M. E. (2015). Social safeness and psychological vulnerability in Turkish youth: The mediating role of life satisfaction. *Current Psychology*, 35(1), 22–28. <https://doi.org/10.1007/s12144-015-9359-1>
- Schmidt, C. K., Raque-Bogdan, T. L., & Hollern, E. A. (2019). Self-compassion, affect, and body image in college women. *Journal of College Counseling*, 22(2), 152–163. <https://doi.org/10.1002/jocc.12127>
- Schneider, S., & Stone, A. A. (2015). Ambulatory and diary methods can facilitate the measurement of patient-reported outcomes. *Quality of Life Research*, 25(3), 497–506. <https://doi.org/10.1007/s11136-015-1054-z>
- Schotanus-Dijkstra, M., Drossaert, C. H. C., Pieterse, M. E., Boon, B., Walburg, J. A., & Bohlmeijer, E. T. (2017). An early intervention to promote well-being and flourishing and reduce anxiety and depression: A randomized controlled trial. *Internet Interventions*, 9, 15–24. <https://doi.org/10.1016/j.invent.2017.04.002>

- Schueller, S. M., & Parks, A. C. (2014). The science of self-help. *European Psychologist, 19*(2), 145–155. <https://doi.org/10.1027/1016-9040/a000181>
- Seiler, J. L., Cosme, C. V., Sherathiya, V. N., Schaid, M. D., Bianco, J. M., Bridgemohan, A. S., & Lerner, T. N. (2022). Dopamine signaling in the dorsomedial striatum promotes compulsive behavior. *Current Biology, 32*(5), 1175-1188.e5. <https://doi.org/10.1016/j.cub.2022.01.055>
- Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.
- Seow, L. S. E., Vaingankar, J. A., Abdin, E., Sambasivam, R., Jeyagurunathan, A., Pang, S., Chong, S. A., & Subramaniam, M. (2016). Positive mental health in outpatients with affective disorders: Associations with life satisfaction and general functioning. *Journal of Affective Disorders, 190*, 499–507. <https://doi.org/10.1016/j.jad.2015.10.021>
- Shahar, B. (2020). New developments in emotion-focused therapy for social anxiety disorder. *Journal of Clinical Medicine, 9*(9), 2918. <https://doi.org/10.3390/jcm9092918>
- Shenk, C. E., & Fruzzetti, A. E. (2011). The impact of validating and invalidating responses on emotional reactivity. *Journal of Social and Clinical Psychology, 30*(2), 163–183. <https://doi.org/10.1521/jscp.2011.30.2.163>
- Siegel, D. J. (2020). *The Developing Mind: How Relationships and the Brain Interact to shape who we are*. Guilford Publications.
- Sim, L. A., Sadowski, C. M., Whiteside, S. P., & Wells, L. A. (2004). Family-Based therapy for adolescents with anorexia nervosa. *Mayo Clinic Proceedings, 79*(10), 1305–1308. <https://doi.org/10.4065/79.10.1305>

- Sirois, F. M., Kitner, R., & Hirsch, J. K. (2015). Self-compassion, affect, and health-promoting behaviors. *Health Psychology, 34*(6), 661–669. <https://doi.org/10.1037/hea0000158>
- Smeets, E., Neff, K., Alberts, H., & Peters, M. (2014). Meeting suffering with kindness: Effects of a brief self-compassion intervention for female college students. *Journal of Clinical Psychology, 70*(9), 794–807. <https://doi.org/10.1002/jclp.22076>
- Smith, J. A., Lumley, M. A., & Longo, D. J. (2002). Contrasting emotional approach coping with passive coping for chronic myofascial pain. *Annals of Behavioral Medicine, 24*(4), 326–335. https://doi.org/10.1207/s15324796abm2404_09
- Smith, M. B. (1959). Research strategies toward a conception of positive mental health. *American Psychologist, 14*(11), 673–681. <https://doi.org/10.1037/h0040030>
- Smyth, J. M., Wonderlich, S. A., Heron, K. E., Sliwinski, M. J., Crosby, R. D., Mitchell, J. E., & Engel, S. G. (2007). Daily and momentary mood and stress are associated with binge eating and vomiting in bulimia nervosa patients in the natural environment. *Journal of Consulting and Clinical Psychology, 75*(4), 629–638. <https://doi.org/10.1037/0022-006x.75.4.629>
- Snijders, T. A. B., & Bosker, R. J. (2011). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. SAGE.
- Sommers-Spijkerman, M. P. J., Trompetter, H. R., Schreurs, K. M. G., & Bohlmeijer, E. T. (2018). Compassion-focused therapy as guided self-help for enhancing public mental health: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 86*(2), 101–115. <https://doi.org/10.1037/ccp0000268>
- Soyka, L. A., Misra, M., Frenchman, A., Miller, K. K., Grinspoon, S., Schoenfeld, D. A., & Klibanski, A. (2002). Abnormal bone mineral accrual in adolescent girls with anorexia

- nervosa. *J Clin Endocrinol Meta*, 87(9), 4177–4185. <https://doi.org/10.1210/jc.2001-011889>
- Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology*, 78(6), 1150–1169. <https://doi.org/10.1037/0022-3514.78.6.1150>
- Stedal, K., Broomfield, C., Hay, P., Touyz, S., & Scherer, R. (2021). Neuropsychological functioning in adult anorexia nervosa: A meta-analysis. *Neurosci Biobehav Rev*, 130, 214–226. <https://doi.org/10.1016/j.neubiorev.2021.08.021>
- Steffen, P. R., Bartlett, D., Channell, R. M., Jackman, K., Cressman, M., Bills, J., & Pescatello, M. (2021). Integrating breathing techniques into psychotherapy to improve HRV: Which approach is best? *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.624254>
- Steindl, S. R., Buchanan, K., Goss, K., & Allan, S. (2017a). Compassion focused therapy for eating disorders: A qualitative review and recommendations for further applications. *Clinical Psychologist*, 21(2), 62–73. <https://doi.org/10.1111/cp.12126>
- Steindl, S. R., Buchanan, K., Goss, K., & Allan, S. (2017b). Compassion focused therapy for eating disorders: A qualitative review and recommendations for further applications. *Clinical Psychologist*, 21(2), 62–73. <https://doi.org/10.1111/cp.12126>
- Stice, E. (n.d.). *Eating Disorder Diagnostic Scale*. Measures Created or Modified by Eric Stice, Ph.D. Retrieved September 20, 2022, from <http://www.ori.org/sticemeasures>
- Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment*, 12(2), 123–131. <https://doi.org/10.1037/1040-3590.12.2.123>

- Streatfeild, J., Hickson, J., Austin, S. B., Hutcheson, R., Kandel, J. S., Lampert, J. G., Myers, E. M., Richmond, T. K., Samnaliev, M., Velasquez, K., Weissman, R. S., & Pezzullo, L. (2021). Social and economic cost of eating disorders in the United States: Evidence to inform policy action. *International Journal of Eating Disorders*, 54(5), 851–868.
<https://doi.org/10.1002/eat.23486>
- Striegel-Moore, R. H., DeBar, L., Wilson, G. T., Dickerson, J., Rosselli, F., Perrin, N., Lynch, F., & Kraemer, H. C. (2007). Health services use in eating disorders. *Psychological Medicine*, 38(10), 1465–1474. <https://doi.org/10.1017/s0033291707001833>
- Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders*, 47(7), 710–717.
<https://doi.org/10.1002/eat.22302>
- Taylor, C. T., Bomyea, J., & Amir, N. (2010). Attentional bias away from positive social information mediates the link between social anxiety and anxiety vulnerability to a social stressor. *Journal of Anxiety Disorders*, 24(4), 403–408.
<https://doi.org/10.1016/j.janxdis.2010.02.004>
- Taylor, M. B., Daiss, S., & Krietsch, K. (2015). Associations among self-compassion, mindful eating, eating disorder symptomatology, and body mass index in college students. *Translational Issues in Psychological Science*, 1(3), 229–238.
<https://doi.org/10.1037/tps0000035>
- Tchanturia, K., Liao, P.-C., Uher, R., Lawrence, N., Treasure, J., & Campbell, I. C. (2007). An investigation of decision making in anorexia nervosa using the Iowa Gambling Task and skin conductance measurements. *Journal of the International Neuropsychological Society*, 13(04). <https://doi.org/10.1017/s1355617707070798>

- Teale Sapach, M. J. N., & Carleton, R. N. (2022). Self-compassion training for individuals with social anxiety disorder: A preliminary randomized controlled trial. *Cognitive Behaviour Therapy*, 52(1), 18–37. <https://doi.org/10.1080/16506073.2022.2130820>
- Thøgersen-Ntoumani, C., Dodos, L., Chatzisarantis, N., & Ntoumanis, N. (2017). A diary study of self-compassion, upward social comparisons, and body image-related outcomes. *Applied Psychology: Health and Well-Being*, 9(2), 242–258. <https://doi.org/10.1111/aphw.12089>
- Thornton, L. M., Mazzeo, S. E., & Bulik, C. M. (2010). The heritability of eating disorders: Methods and current findings. In *Current Topics in Behavioral Neurosciences* (pp. 141–156). Springer Berlin Heidelberg. https://doi.org/10.1007/7854_2010_91
- Tiller, J. M., Sloane, G., Schmidt, U., Troop, N., Power, M., & Treasure, J. L. (1997). Social support in patients with anorexia nervosa and bulimia nervosa. *International Journal of Eating Disorders*, 21(1), 31–38. [https://doi.org/10.1002/\(sici\)1098-108x\(199701\)21:1<31::aid-eat4>3.3.co;2-n](https://doi.org/10.1002/(sici)1098-108x(199701)21:1<31::aid-eat4>3.3.co;2-n)
- Timulak, L. (2015). *Transforming emotional pain in psychotherapy: An emotion-focused approach*. Routledge.
- Tobin, R., & Dunkley, D. M. (2021). Self-critical perfectionism and lower mindfulness and self-compassion predict anxious and depressive symptoms over two years. *Behaviour Research and Therapy*, 136, 103780. <https://doi.org/10.1016/j.brat.2020.103780>
- Tomba, E., Tecuta, L., Crocetti, E., Squarcio, F., & Tomei, G. (2019). Residual eating disorder symptoms and clinical features in remitted and recovered eating disorder patients: A systematic review with meta-analysis. *International Journal of Eating Disorders*, 52(7), 759–776. <https://doi.org/10.1002/eat.23095>

- Tomba, E., Tecuta, L., Schumann, R., & Ballardini, D. (2017). Does psychological well-being change following treatment? An exploratory study on outpatients with eating disorders. *Comprehensive Psychiatry*, 74, 61–69. <https://doi.org/10.1016/j.comppsy.2017.01.001>
- Treasure, J., Murphy, T., Szumukler, T., Todd, G., Gavan, K., & Joyce, J. (2001). The experience of caregiving for severe mental illness: A comparison between anorexia nervosa and psychosis. *Social Psychiatry and Psychiatric Epidemiology*, 36(7), 343–347. <https://doi.org/10.1007/s001270170039>
- Treasure, J., Parker, S., Oyeleye, O., & Harrison, A. (2020). The value of including families in the treatment of anorexia nervosa. *European Eating Disorders Review*, 29(3), 393–401. <https://doi.org/10.1002/erv.2816>
- Trincas, R., Bilotta, E., & Mancini, F. (2016). Specific beliefs about emotions are associated with different emotion-regulation strategies. *Psychology*, 7(13), 1682–1699. <https://doi.org/10.4236/psych.2016.713159>
- Troop, N. A., Allan, S., Treasure, J. L., & Katzman, M. (2003). Social comparison and submissive behaviour in eating disorder patients. *Psychology and Psychotherapy: Theory, Research and Practice*, 76(3), 237–249. <https://doi.org/10.1348/147608303322362479>
- Tryon, G. S., Birch, S. E., & Verkuilen, J. (2018). Meta-analyses of the relation of goal consensus and collaboration to psychotherapy outcome. *Psychotherapy*, 55(4), 372–383. <https://doi.org/10.1037/pst0000170>
- Turk, F., Kellett, S., & Waller, G. (2021). Determining the potential links of self-compassion with eating pathology and body image among women and men: A cross-sectional mediational study. *Body Image*, 37, 28–37. <https://doi.org/10.1016/j.bodyim.2021.01.007>

- Turk, F., & Waller, G. (2020). Is self-compassion relevant to the pathology and treatment of eating and body image concerns? A systematic review and meta-analysis. *Clinical Psychology Review*, 79, 101856. <https://doi.org/10.1016/j.cpr.2020.101856>
- Udo, T., & Grilo, C. M. (2019). Psychiatric and medical correlates of DSM-5 eating disorders in a nationally representative sample of adults in the United States. *International Journal of Eating Disorders*, 52(1), 42–50. <https://doi.org/10.1002/eat.23004>
- Vall, E., & Wade, T. D. (2015). Predictors of treatment outcome in individuals with eating disorders: A systematic review and meta-analysis. *International Journal of Eating Disorders*, 48(7), 946–971. <https://doi.org/10.1002/eat.22411>
- Veilleux, J., Clift, J. B., Brott, K. H., Warner, E., Schreiber, R., Henderson, H., & Shelton, D. (2023). “I’m so dumb and worthless right now”: Factors associated with heightened momentary self-criticism in daily life. Center for Open Science. <https://doi.org/10.31234/osf.io/2dcvf>
- Veneziani, C. A., Fuochi, G., & Voci, A. (2017). Self-compassion as a healthy attitude toward the self: Factorial and construct validity in an Italian sample. *Personality and Individual Differences*, 119, 60–68. <https://doi.org/10.1016/j.paid.2017.06.028>
- Verstuyf, J., Vansteenkiste, M., Soenens, B., Boone, L., & Mouratidis, A. (2013). Daily ups and downs in women’s binge eating symptoms: The role of basic psychological needs, general self-control, and emotional eating. *Journal of Social and Clinical Psychology*, 32(3), 335–361. <https://doi.org/10.1521/jscp.2013.32.3.335>
- Vuillier, L., Joseph, J., Somerville, M. P., & Harrison, A. (2021). Believing emotions are uncontrollable is linked to eating disorder psychopathology via suppression and

- reappraisal. *Journal of Eating Disorders*, 9(1). <https://doi.org/10.1186/s40337-021-00395-8>
- Wagener, A. M., & Much, K. (2010). Eating disorders as coping mechanisms. *Journal of College Student Psychotherapy*, 24(3), 203–212. <https://doi.org/10.1080/87568225.2010.486291>
- Wagner, S., Halmi, K. A., & Maguire, T. V. (1987). The sense of personal ineffectiveness in patients with eating disorders: One construct or several? *International Journal of Eating Disorders*, 6(4), 495–505. [https://doi.org/10.1002/1098-108x\(198707\)6:4<495::aid-eat2260060406>3.0.co;2-i](https://doi.org/10.1002/1098-108x(198707)6:4<495::aid-eat2260060406>3.0.co;2-i)
- Wang, Y., Fan, L., Zhu, Y., Yang, J., Wang, C., Gu, L., Zhong, S., Huang, Y., Xie, X., Zhou, H., Luo, S., & Wu, X. (2019). Neurogenetic mechanisms of self-compassionate mindfulness: The role of oxytocin-receptor genes. *Mindfulness*, 10(9), 1792–1802. <https://doi.org/10.1007/s12671-019-01141-7>
- Watermann, L. (2020). *How the social context affects self-compassion and its association with stress – an experience sampling study*. (pp. 1–22) [Master’s Thesis, University of Twente]. University of Twente Student Theses. https://essay.utwente.nl/81026/1/Watermann_MA_BMS.pdf
- Watkins, B., Cooper, P. J., & Lask, B. (2011). History of eating disorder in mothers of children with early onset eating disorder or disturbance. *European Eating Disorders Review*, 20(2), 121–125. <https://doi.org/10.1002/erv.1125>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. <https://doi.org/10.1037/0022-3514.54.6.1063>

- Watson, H. J., O'Brien, A., & Sadeh-Sharvit, S. (2018). Children of parents with eating disorders. *Current Psychiatry Reports*, 20(11). <https://doi.org/10.1007/s11920-018-0970-3>
- Webb, H., Griffiths, M., & Schmidt, U. (2024). Experiences of intensive treatment for people with eating disorders: A systematic review and thematic synthesis. *Journal of Eating Disorders*, 12(1). <https://doi.org/10.1186/s40337-024-01061-5>
- Webb, J. B., Fiery, M. F., & Jafari, N. (2016). “You better not leave me shaming!”: Conditional indirect effect analyses of anti-fat attitudes, body shame, and fat talk as a function of self-compassion in college women. *Body Image*, 18, 5–13. <https://doi.org/10.1016/j.bodyim.2016.04.009>
- Wergeland, G. J., Ghaderi, A., Fjermestad, K., Enebrink, P., Halsaa, L., Njardvik, U., Riise, E. N., Vorren, G., & Öst, L.-G. (2024). Family therapy and cognitive behavior therapy for eating disorders in children and adolescents in routine clinical care: A systematic review and meta-analysis. *European Child & Adolescent Psychiatry*, 34(3), 883–902. <https://doi.org/10.1007/s00787-024-02544-1>
- Wollast, R., Riemer, A. R., Sarda, E., Wiernik, B. M., & Klein, O. (2020). How self-compassion moderates the relation between body surveillance and body shame among men and women. *Mindfulness*, 11(10), 2298–2313. <https://doi.org/10.1007/s12671-020-01448-w>
- Woodside, D. B., Garfinkel, P. E., Lin, E., Goering, P., Kaplan, A. S., Goldbloom, D. S., & Kennedy, S. H. (2001). Comparisons of men with full or partial eating disorders, men without eating disorders, and women with eating disorders in the community. *American Journal of Psychiatry*, 158(4), 570–574. <https://doi.org/10.1176/appi.ajp.158.4.570>

- World Health Organization. (2022). *WHO guideline on self-care interventions for health and well-being, 2022 revision*. World Health Organization.
- World Health Organization. (2022, June 17). Mental health. *World Health Organization: WHO*. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
- Wouters-Soomers, L., Van Ruysseveldt, J., Bos, A. E. R., & Jacobs, N. (2022). An individual perspective on psychological safety: The role of basic need satisfaction and self-compassion. *Frontiers in Psychology, 13*. <https://doi.org/10.3389/fpsyg.2022.920908>
- Zessin, U., Dickhäuser, O., & Garbade, S. (2015). The relationship between self-compassion and well-being: A meta-analysis. *Applied Psychology: Health and Well-Being, 7*(3), 340–364. <https://doi.org/10.1111/aphw.12051>
- Zhang, J. W., Bui, van, Snell, A. N., Howell, R. T., & Bailis, D. (2021). Daily self-compassion protects Asian Americans/Canadians after experiences of COVID-19 discrimination: Implications for subjective well-being and health behaviors. *Self and Identity, 21*(8), 891–913. <https://doi.org/10.1080/15298868.2021.2012511>
- Zhang, J. W., Chen, S., & Tomova Shakur, T. K. (2019). From me to you: Self-compassion predicts acceptance of own and others' imperfections. *Personality and Social Psychology Bulletin, 46*(2), 228–242. <https://doi.org/10.1177/0146167219853846>
- Zhang, J. W., Howell, R. T., Chen, S., Goold, A. R., Bilgin, B., Chai, W. J., & Ramis, T. (2022). 'I have high self-compassion': A face-valid single-item self-compassion scale for resource-limited research contexts. *Clinical Psychology & Psychotherapy, 29*(4), 1463–1474. <https://doi.org/10.1002/cpp.2714>

Zuroff, D. C., Stotland, S., Sweetman, E., Craig, J., & Koestner, R. (1995). Dependency, self-criticism and social interactions. *British Journal of Clinical Psychology*, 34(4), 543–553.
<https://doi.org/10.1111/j.2044-8260.1995.tb01488.x>