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Review

An examination of emotion dysregulation in maladaptive perfectionism

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HIGHLIGHTS

- Little is known about emotion dysregulation in maladaptive perfectionism.
- We review evidence of emotion dysregulation and propose a conceptual model.
- Key processes include heightened negative emotions and unhelpful regulation strategies.
- Low emotional awareness and unhelpful emotion regulation goals are also discussed.
- Targeting these processes may enhance treatment for maladaptive perfectionism.

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ABSTRACT

Maladaptive perfectionism has been shown to be associated with undesirable outcomes, such as elevated negative emotions and psychopathological traits. Perhaps unsurprisingly, there is preliminary evidence that maladaptive perfectionism is also related to emotion dysregulation. However, the nature of emotion dysregulation in perfectionism has not been characterized. In this review, Gross and Jazaieri's (2014) clinically-informed framework of emotion dysregulation is used to review the evidence of emotion dysregulation in maladaptive perfectionism. Specifically, this paper reviews evidence of problematic emotional experiences and unhelpful emotion regulation strategies in maladaptive perfectionism and discusses how poor emotional awareness and emotion regulation goals may also contribute to emotion dysregulation. A conceptual model of these components of emotion dysregulation in maladaptive perfectionism is proposed in which heightened negative affect in response to threatened perfectionistic standards is posited to be at the core of emotion dysregulation, and implicit and explicit unhelpful emotion regulation strategies and poor emotion regulation goals are suggested to contribute to further dysregulation and elevated negative affect. Clinical implications, limitations in the extant research, and future directions are discussed.

1. Introduction

Early writings on perfectionism as a psychological construct noted that perfectionistic beliefs and tendencies were associated with emotional distress and sustained disturbance (e.g., Adler, 1956; Ellis, 1958). More recent empirical research builds on these conceptualizations by showing that those higher in perfectionism report greater emotion dysregulation (e.g., Aldea & Rice, 2006; Montano et al., 2016). However, emotion dysregulation is a multicomponent, complex term, and the literature reflects a lack of a clear understanding of the components implicated in perfectionism. As such, the objective of this paper is to review evidence of emotion dysregulation in maladaptive perfectionism based on Gross and Jazaieri's (2014) multicomponent clinically-informed framework, and to propose a conceptual model of how these components interact to maintain emotion dysregulation in maladaptive perfectionism.

2. Defining perfectionism: a conceptual overview

What does it mean to be a perfectionist? What appears at first glance to be a straightforward question is actually a complex issue riddled with controversy. In fact, there is no universally agreed upon definition of perfectionism, and there are striking differences in the way researchers conceptualize and assess perfectionism. The following sections will provide a brief overview of the conceptual development of perfectionism.

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2.1. Unidimensional and multidimensional conceptualizations of perfectionism

Well before the development of any perfectionism measures, clinicians and theorists made observations about individuals who strive for extremely high, and often unachievable, standards. Prominent psychodynamic personality theorists, including Freud (1926), Adler (1956) and Horney (1950) described perfectionism as a psychological construct linked with neuroticism, whereas cognitive theorists, such as Albert Ellis (1958), Aaron Beck (1976), and David Burns (1980), described perfectionism as an irrational and dysfunctional way of thinking that contributes to disturbances in emotion and behavior. Further, clinicians and theorists documented that perfectionists pursue extremely high standards and are self-critical when these standards are not met (Burns, 1980, p. 34; Missildine, 1963, p. 75). Collectively, early writings on perfectionism suggest that perfectionism was considered to be a self-focused, maladaptive trait, delineated by irrational beliefs and attitudes.

Hamachek (1978) was perhaps the first to suggest perfectionism consists of multiple dimensions; normal and neurotic. According to Hamachek (1978), "normal" perfectionists received pleasure from their perfectionistic strivings and were less rigid compared to "neurotic" perfectionists who never saw their efforts as good enough and did not get satisfaction from their perfectionistic pursuits. In the 1990s, both Frost, Marten, Lahart, and Rosenblate (1990) and Hewitt and Flett (1991) independently developed multidimensional models of perfectionism alongside Multidimensional Perfectionism Scales (MPS-F and MPS-HF, respectively). Frost et al.'s (1990) model of perfectionism was made up of six dimensions including the tendency to set excessively high personal standards, concern and fear of making mistakes, doubts about the quality of one's performance, high parental expectations, parental criticism, and need for organization and precision. In contrast, Hewitt and Flett (1991) proposed perfectionism has three dimensions, including self-oriented perfectionism (i.e., the tendency to set high personal standards and evaluate one's behavior harshly and inflexibly), other-oriented perfectionism (i.e., the tendency to impose unrealistic standard on others and evaluate others in a strict and precise manner), and socially prescribed perfectionism (i.e., the belief that others hold high, unrealistic expectations and that others will be critical and disapproving if the standards go unmet). Frost et al.'s (1990) and Hewitt and Flett's (1991) Multidimensional Perfectionism Scales are the two most widely used measures in the perfectionism literature; however, other influential models and scales have since been developed. For instance, Slaney and colleagues (Slaney, Rice, & Ashby, 2002; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) developed the Almost Perfect Scale-Revised (APS-R) to capture the positive and negative aspects of perfectionism. The dimensions include the need for order, organization, and precision, and one's high personal standards and performance expectations, which reflect positive aspects of perfectionism. The third dimension, discrepancy, refers to one's level of self-criticism about one's ability to achieve personal standards and goals, and is related to greater negative outcomes, such as self-esteem (Slaney et al., 2001).

2.1.1. A clinical conceptualization of perfectionism

Based on Shafran, Cooper, and Fairburn's (2002) observation that the multidimensional models of perfectionism are broad and deviate from earlier conceptualizations of perfectionism as a unidimensional, pathological trait, they proposed an alternative model. Specifically, they proposed perfectionism to be a dysfunctional, clinical construct defined as "the overdependence of self-evaluation on the determined pursuit of personally demanding, self-imposed, standards in at least one highly salient domain, despite adverse consequences." Shafran et al.' (2002) model emphasizes factors that maintain perfectionism (e.g., fear of failure, distorted cognitions) and this conceptualization more closely aligns with earlier descriptions of perfectionism as a unidimensional, dysfunctional construct (e.g., Burns, 1980; Ellis, 1958; Missildine, 1963). In sum, there are diverse models of perfectionism that each offer valuable insight and continue to be used in perfectionism research. However, the diversity across models precludes a unified conceptualization and as such, researchers have investigated commonalities among the models.

2.2. Two higher order dimensions of perfectionism

Factor-analytical research that has examined the underlying structure of the multidimensional perfectionism measures supports two higher order dimensions of perfectionism that are commonly used in contemporary research. Although having been referred to differently by various research groups, these higher order dimensions include a more healthy or *adaptive* dimension and a more unhealthy or *maladaptive* dimension of perfectionism (e.g., Bieling, Israeli, & Antony, 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Rice & Ashby, 2007; Slade & Owens, 1998; Terry-Short, Owens, Slade, & Dewey, 1995). The maladaptive dimension comprises doubts about actions, concern over mistakes, parental criticism and expectations, and socially prescribed perfectionism whereas the adaptive dimension includes high personal standards, the need for organization, and self-oriented and other-oriented perfectionism.

Support for the higher order dimensions of perfectionism comes from evidence that the factors differentially relate to positive and negative outcomes. In general, greater maladaptive perfectionism is associated with higher negative affect (NA), negative emotions (e.g., anxiety, hostility, and shame), and depression or dysphoric symptoms (Besser, Flett, & Hewitt, 2004; Brown et al., 1999; Dunkley, Berg, & Zuroff, 2012; Dunkley, Zuroff, & Blankstein, 2003; Fedewa, Burns, & Gomez, 2005; Frost et al., 1993; Molnar, Reker, Culp, Sadava, & DeCourville, 2006). Maladaptive perfectionism has also been found to be positively associated with psychopathology (e.g., Flett & Hewitt, 2002; Stoeber & Otto, 2006), poor academic achievement and satisfaction (Gaudreau & Thompson, 2010), and insecure relationships (Rice & Mirzadeh, 2000). Consistently, greater maladaptive perfectionism is associated with lower positive affect (PA; Brown et al., 1999; Dunkley et al., 2003; Molnar et al., 2006), self-esteem, self-confidence and well-being (Ashby, Rice, & Martin, 2006; Chang, Watkins, & Banks, 2004; Dunkley et al., 2003). In contrast, greater adaptive perfectionism is associated with higher PA, (Brown et al., 1999; Frost et al., 1993; Molnar et al., 2006) and lower NA compared to maladaptive perfectionism (Brown et al., 1999; Dunkley, Blankstein, & Berg, 2012). Adaptive perfectionism has generally been associated with low levels of stress, shame, and anxiety, higher levels of optimism, pride, and self-esteem (Ashby & Rice, 2002; Fedewa et al., 2005; Lizmore, Dunn, & Dunn, 2017), and greater academic goal-attainment and satisfaction (Gaudreau & Thompson, 2010). Further, researchers have either failed to find an association between adaptive perfectionism and psychological distress or have found an inverse relationship between the two (Antony, Purdon, Huta, & Swinson, 1998; Chang et al., 2004; Enns & Cox, 1999). In sum, research corroborates that maladaptive dimensions of perfectionism are associated with greater negative outcomes whereas individuals higher on adaptive dimensions of perfectionism are less vulnerable to negative outcomes. However, the notion of adaptive perfectionism has been challenged.

Specifically, researchers have highlighted that dimensions of perfectionism considered to be adaptive based on the higher order model have also been associated with negative outcomes. For instance, pursuing high standards has been associated with low satisfaction, low self-acceptance, and high depression, eating disorders, and self-punitive habits (Flett, Besser, Davis, & Hewitt, 2003; Flett & Hewitt, 2006; Sassaroli et al., 2008). It has been suggested that the adaptiveness of perfectionism is misrepresented in the higher order model and that adaptive perfectionism may be better accounted for by conscientiousness combined with achievement striving (Flett & Hewitt, 2006; Greenspon, 2000). To address the resistance of the idea of a functional

dimension of perfectionism, Stoeber and Otto (2006) proposed new terms for the dimensions, which reflect different motivations for perfectionistic behavior. Specifically, perfectionistic strivings reflect an intrinsic desire to do well (a healthy form of perfectionism) whereas perfectionistic concerns refer to perfectionistic pursuits that are motivated by a fear of failure and related consequences (e.g., criticism). It was suggested that this categorization may be more fitting given that the terms functional and adaptive strongly insinuate positivity, which some researchers argue is inconsistent with perfectionism. At this time, the idea of an adaptive, or healthy, form of perfectionism still remains a controversial subject, and longitudinal research is needed to investigate whether adaptive perfectionism, or perfectionistic strivings, predicts improvements in positive outcomes, such as well-being (Stoeber & Otto, 2006).

In summary, although the different conceptualizations of perfectionism provide unique contributions to the field, factor-analytic research supports two major dimensions of perfectionism, maladaptive and adaptive perfectionism. There is an impressive body of research showing that greater maladaptive perfectionism is associated with greater NA and negative outcomes. In contrast, there is less convergence on the nature of adaptive perfectionism and further research is needed to investigate the extent to which adaptive/healthy perfectionism has positive and long-lasting benefits. This review paper will focus on emotion dysregulation in *maladaptive perfectionism*. It is well-known that emotion dysregulation is implicated in distress-related conditions and is associated with negative outcomes (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Hofmann, Sawyer, Fang, & Asnaani, 2012). Consequently, it would be expected that dimensions of maladaptive perfectionism would be associated with emotion dysregulation more so than adaptive dimensions of perfectionism, a notion that has received preliminary support in the literature (Aldea & Rice, 2006). As such, this review will focus on emotion dysregulation in maladaptive perfectionism.

3. Emotion regulation and dysregulation: conceptual considerations

An early definition of emotion regulation was proposed by Thompson (1994) who suggested, “Emotion regulation consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features to accomplish one's goals.” (p. 27–28). Consistently, Gross (1998, 2002) delineates emotion regulation as a set of automatic and controlled processes that influence our experience and expression of emotions in line with our goals. Emotion regulation has been suggested to be antecedent and response focused, meaning that emotions can be influenced both before and after they emerge (Gross & Muñoz, 1995). Further, based on observations that emotions are influenced by other people, it has been suggested that emotion regulation has an interpersonal element (Cole, Martin, & Dennis, 2004). As well, a number of researchers have highlighted the critical role of cognitive processes in emotion regulation (e.g., Izard et al., 2011; Koole, 2009), including the role of attentional processes and cognitive appraisals in changing our emotional experiences.

Several conceptualizations and models of emotion regulation have been proposed. For instance, Gratz and Roemer (2004) delineated emotion regulation as a multidimensional construct that involves flexibly using adaptive strategies to regulate emotion, the ability to withhold impulsive behaviors under distress to pursue goal-directed behaviors, being aware of one's emotional experience, and being willing to tolerate distress in the pursuit of goal-directed behavior. Similarly, Gross and Thompson (2007) proposed that emotion regulation consists of five strategies, which may include response- or antecedent-focused strategies, depending on when they are used in the emotion generation process. Specifically, Gross and Thompson (2007) posit that people can choose to approach, avoid, or alter situations that evoke emotion, they can change what stimuli they pay attention to and their thoughts about emotion-arousing situations, and they can modify and adjust their response to the situation. Building on this conceptualization, Gross and Etkin (2011) proposed a dual-process theoretical framework that emphasizes differences between implicit emotion regulation (i.e., habitual patterns that are effortless and outside of one's awareness) and explicit emotion regulation (i.e., processes that are effortful and within one's awareness), and suggest that both are required for well-being (Gyurak, Gross, & Etkin, 2011).

Collectively, conceptualizations of emotion regulation suggest that it involves physiological, behavioral, and cognitive processes that alter one's emotional experience and response, in an implicit or explicit manner (Gratz & Roemer, 2004; Gross, 1998; Gyurak et al., 2011; Koole, 2009; Thompson, 1994). Further, researchers concur that adaptive emotion regulation depends on being able to flexibly use emotion regulation strategies in order to use the appropriate strategy within the given context (Gratz & Roemer, 2004; Gross & Thompson, 2007; Sheppes & Gross, 2011; Thompson, 1994). Adaptive emotion regulation is assumed to be inherent in adaptive functioning and well-being (Gratz & Roemer, 2004; Gross & John, 2003; Gross & Muñoz, 1995). However, not everyone engages in adaptive emotion regulation, which can lead to patterns of emotion dysregulation.

Broadly, emotion dysregulation denotes the use of ineffective emotion regulation strategies (i.e., emotion regulation failures) and difficulty choosing the most appropriate strategy to achieve a goal (i.e., emotion misregulation; Gross & Jazaieri, 2014). For example, reappraisal and suppression are two commonly used emotion regulation strategies to down-regulate negative emotions. However, reappraisal has been found to be more effective at reducing NA than suppression (Gross, 2002). As such, not using reappraisal when experiencing NA would suggest an emotion regulation failure whereas using emotion suppression would be considered a form of emotion misregulation. Emotion dysregulation is suggested to result from patterns of emotion regulation that compromise well-being in the long-term, even if the strategies provide relief in the short-term (Cole & Hall, 2008; Gross & Jazaieri, 2014). Emotion dysregulation has been proposed as a transdiagnostic process characteristic of various mental health problems (Kring, 2008) and it is regarded as a general feature of psychopathology (Cicchetti, Ackerman, & Izard, 1995; Gross & Muñoz, 1995). Although often used interchangeably, “problems in emotion regulation” has been proposed to be distinct from emotion dysregulation such that problems in emotion regulation refers to the absence of emotion regulation strategies as opposed to inappropriate use of emotion regulation strategies (Cicchetti et al., 1995). This distinction has important implications for treatment as different interventions would be used if an individual was misusing emotion regulation skills as opposed to if they lacked emotion regulation skills when needed. Similar to emotion regulation, several conceptualizations of emotion dysregulation and associated models have been proposed (e.g., Cole & Hall, 2008; Gratz & Roemer, 2004; Gross & Jazaieri, 2014; Linehan, 1993). Common themes of dysfunction across the different conceptualizations include problematic emotional responses, such as long-lasting emotional experiences and emotional experiences that are contextually inappropriate (Cole & Hall, 2008; Gross & Jazaieri, 2014; Linehan, 1993), as well as low emotional awareness, self-defeating beliefs about one's ability to self-regulate, and difficulty managing one's behaviors and achieving goals when experiencing negative emotions (Cole & Hall, 2008; Gratz & Roemer, 2004; Gross & Jazaieri, 2014).

Although there are several models of emotion dysregulation, Gross and Jazaieri's (2014) framework was selected to review emotion dysregulation in perfectionism for the following reasons. First, this framework is clinically-informed and was developed to encourage researchers to critically consider the components of emotion dysregulation implicated in clinical conditions. Although not a disorder as defined by the *Diagnostic and Statistical Manual of Mental Disorders fifth edition* (DSM-5; American Psychiatric Association, 2013),

maladaptive perfectionism has been conceptualized as a *clinical* condition for which treatment protocols have been developed (Antony & Swinson, 2009; Egan, Wade, Shafran, & Antony, 2014; Hewitt, Flett, & Mikail, 2017; Shafran et al., 2002; Shafran, Egan, & Wade, 2018). Further, perfectionism is linked with many types of psychopathology. For instance, perfectionism is a symptom of Obsessive-Compulsive Personality Disorder (OCPD) and is correlated with other personality disorder symptoms (Ayearst, Flett, & Hewitt, 2012; Dimaggio et al., 2018). Maladaptive perfectionism is also found to co-occur alongside psychiatric disorders such as mood and anxiety disorders and eating disorders and, as such, is suggested to be a transdiagnostic factor across psychopathology (Egan, Wade, & Shafran, 2011). Therefore, using Gross and Jazaieri's (2014) framework may assist in clarifying components of emotion dysregulation that are unique to maladaptive perfectionism and that overlap with other conditions. According to Gross and Jazaieri's (2014) framework, problems in emotional experience (i.e., intensity, duration, frequency, and type), problematic awareness of emotions, problematic emotion regulation goals, and problematic emotion regulation strategies play an important role in emotion dysregulation. The objectives of the remainder of this paper are to (1) review evidence of emotion dysregulation in maladaptive perfectionism, and (2) propose a conceptual model of the components of emotion dysregulation in maladaptive perfectionism.

4. Emotion dysregulation in maladaptive perfectionism: a review of the evidence

4.1. Problematic emotional experiences in maladaptive perfectionism

Gross and Jazaieri (2014) posit that emotion dysregulation contributes to problems in emotional experiences, including problematic emotional intensity, duration, frequency, or type. According to schema theory, perfectionists have a maladaptive interpersonal schema that contributes to problematic emotional experiences. Specifically, a maladaptive interpersonal schema arises when the need for love, acceptance, and caring is met instead with criticism and rejection. As a result of this unfulfilled need, the individual is likely to experience sadness, shame, and anger. This NA is hypothesized to incite perfectionistic behaviors in an effort to gain acceptance and approval and to protect one's self-esteem (Dimaggio, Montano, Popolo, & Salvatore, 2015; Hewitt, Flett, & Mikail, 2017). However, negative views of oneself, including feeling defective, flawed, and unlovable, are likely to be perpetuated by poor interpersonal interactions (e.g., being cold and hostile towards others). Further, any approval is likely to be believed to be conditional on being perfect, which perpetuates perfectionistic behaviors. Consequently, although perfectionistic tendencies may reduce NA in the short-term, these coping strategies maintain NA in the long-term and are suggested to contribute to poor self-regulation (Dimaggio et al., 2015; Hewitt, Flett, Mikail, Kealy, & Zhang, 2017). Moreover, maladaptive perfectionists hold themselves to extremely high, unrealistic standards and they tend to view many outcomes as personal failures, are overly self-critical, and are dissatisfied with their accomplishments even if they well-exceed average standards, which likely contribute to elevated NA (Aldea & Rice, 2006; Frost et al., 1990; Hewitt & Flett, 1991). Further support for problematic emotional experiences in maladaptive perfectionism comes from evidence of neuroticism and emotional instability in OCPD. Although the faucet of the five-factor model most central to OCPD has been suggested to be conscientiousness, other faucets are also highly correlated with OCPD, including neuroticism (Samuel & Gore, 2012). Elevated neuroticism in OCPD likely contributes to greater NA, emotional intensity and poor emotion regulation that is observed in OCPD relative to healthy controls (Steenkamp, Suvak, Dickstein, Shea, & Litz, 2015). While conscientiousness is related to adaptive dimensions of perfectionism, neuroticism is related to maladaptive dimensions of perfectionism (Dunkley, Blankstein, & Berg, 2012; Smith et al., 2018). As such, associations between neuroticism, OCPD, and maladaptive perfectionism provide further support for elevated NA and problematic emotional reactions in maladaptive perfectionism. As such, there is evidence to suggest that maladaptive perfectionists are at an elevated risk of experiencing negative emotions (e.g., shame, guilt) in response to stressors and everyday hassles (e.g., Alden, Bieling, & Wallace, 1994; Dunkley et al., 2003). Research on emotional reactions to stressors and life events in maladaptive perfectionism provides support for this supposition.

In investigations of reactions to mistakes using experimental and daily diary procedures, individuals higher in concern over mistakes (a maladaptive dimension of perfectionism) responded to mistakes with higher NA compared to those lower in concern over mistakes (Frost et al., 1995; Frost et al., 1997). Similarly, following a class test, correlational analyses revealed that individuals who scored higher on maladaptive dimensions of perfectionism reported higher NA and lower PA immediately following a test (Flett, Blankstein, & Hewitt, 2009), and 2 weeks later when asked to think about a test (Bieling, Israeli, Smith, & Antony, 2003) compared to those higher on adaptive dimensions of perfectionism. In a daily diary study investigating affect in response to daily stressors, individuals high in maladaptive perfectionism reported higher NA when they experienced greater academic hassles (e.g., grades), and social stressors (e.g., perceived criticism), compared to those low in maladaptive perfectionism (Dunkley et al., 2003). Dunkley et al. (2003) also examined associations between affect and coping strategies and found that when participants high in maladaptive perfectionism used unhelpful coping (e.g., self-blame) in response to a stressor, they reported higher NA, compared to those lower in maladaptive perfectionism. In experimental investigations of reactions to failure or negative performance feedback, dimensions of maladaptive perfectionism have been found to be related to increases in negative emotions and decreases in positive emotions after failure (Besser, Flett, Guez, & Hewitt, 2008; Stoeber, Kempe, & Keogh, 2008; Stoeber, Schneider, Hussain, & Matthews, 2014). Further, individuals high in maladaptive perfectionism have been found to report lower positive emotions (e.g., pride), even following the successful completion of a task (Stoeber et al., 2008). Similarly, in a study that looked at emotional reactions to hypothetical scenarios that involved achieving perfect or imperfect outcomes, individuals with maladaptive perfectionism were dissatisfied regardless of whether they imagined achieving a perfect or imperfect outcome (Stoeber & Yang, 2010), suggesting that they respond negatively to even positive outcomes.

Thus, research on emotional reactions to daily stressors, failures, and successes suggests that individuals with maladaptive perfectionism have problematic emotional experiences. Specifically, there is evidence that maladaptive perfectionists are more reactive to stressors and failures compared to those low in maladaptive perfectionism or those higher on more adaptive dimensions of perfectionism (e.g., Dunkley et al., 2003; Flett et al., 2009; Frost et al., 1995; Frost et al., 1997). There is preliminary evidence of problematic emotional duration, as greater maladaptive perfectionism was associated with greater NA when thinking about a stressor that took place 2 weeks ago (Bieling et al., 2003). Even more suggestive of dysfunctional emotional responding is the evidence that maladaptive perfectionists respond to even positive information in a negative manner (Stoeber et al., 2008; Stoeber & Yang, 2010). Although heighted negative emotional experiences may not be dysfunctional in and of themselves, they predispose individuals to a negative mood state, which, in turn, may lead to difficulties regulating emotions (Eisenberg, Fabes, Guthrie, & Reiser, 2000). For instance, compared to PA, NA is related to a narrower behavioral repertoire, which may limit coping strategies (Fredrickson, 1998) and contribute to emotion dysregulation.

4.2. Problematic emotional awareness in maladaptive perfectionism

As suggested by several models of emotion regulation, awareness of

emotions is essential for adaptive emotion regulation (Gratz & Roemer, 2004; Gross & Jazaieri, 2014). Specifically, it is important to be aware of the qualities of one's emotions (e.g., the type of emotion, the intensity of the emotion), to be able to accurately describe and communicate one's emotional experience, and to be aware of the context within which the emotional experience is situated. Emotion awareness is suggested to be key to being flexible when choosing context-appropriate emotion regulation strategies that are in line with emotion regulation goals (Gratz & Roemer, 2004; Gross & Jazaieri, 2014). If individuals have low insight into their emotional experience and the influence of the context on their emotion experience, or if they are hyperaware of their emotional experience, this is suggested to increase the likelihood of emotion misregulation or emotion regulation failures and may contribute to poor emotion regulation goals.

Evidence for low emotional awareness in perfectionism was found in a study that measured emotional awareness using the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990), a performance-based measure (Parling, Mortazavi, & Ghaderi, 2010). Participants were provided with vignettes and were asked to describe how they would feel in the situation and how another person would feel, and the responses were coded for emotional awareness. Perfectionism, as measured by the MPS-F total score, was negatively associated with emotional awareness in a healthy control group (Parling et al., 2010). Further research investigating emotional awareness in perfectionism comes from studies that have explored relations between perfectionism and alexithymia and mindfulness. Greater maladaptive perfectionism has been shown to be associated with greater difficulties identifying and describing emotions as measured by the Toronto Alexithymia Scale (TAS-20; Lundh, Johnsson, Sundqvist, & Olsson, 2002; Parling et al., 2010; Taylor, Ryan, & Bagby, 1985) and greater maladaptive perfectionism predicts higher scores on the TAS-20 independent of anxiety and depression (Lundh et al., 2002). Several studies have found that individuals with higher maladaptive perfectionism report lower mindfulness, as measured by subscales of the Five-Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; James, Verplanken, & Rimes, 2015; Short & Mazmanian, 2013; Wimberley, Mintz, & Suh, 2016) and the Kentucky Inventory of Mindfulness Skills (Baer, Smith, & Allen, 2004; Hinterman, Burns, Hopwood, & Rogers, 2012). The FFMQ subscales include nonreactivity in response to inner experiences, the ability to observe and attend to one's thoughts and feelings, the ability to act with awareness, the ability to describe what one is experiencing, and nonjudgement of inner experiences. Using a factor analysis, James et al. (2015) found that the observe, describe, and nonreact subscales of the FFMQ reflect present moment awareness, and greater maladaptive perfectionism was associated with lower present moment awareness. In addition, a negative relationship between maladaptive perfectionism and mindful awareness was found in a sample with clinical depression. In this study, mindful awareness was found to mediate the relationship between maladaptive perfectionism and depression suggesting that low emotional awareness may contribute to the link between maladaptive perfectionism and psychiatric disorders (Argus & Thompson, 2008). It is also possible that the relationship between low emotional awareness and maladaptive perfectionism is explained by associated psychopathology; however, additional research is needed to test this supposition.

Mindfulness is also heavily implicated in self-compassion, an adaptive emotion regulation strategy that refers to the ability to be sympathetic towards oneself in the event of failure and accept one's personal inadequacies and shortcomings. Self-compassion involves awareness of thoughts and feelings without judgment and acceptance that people are inherently flawed and deserving of compassion (Neff, 2003; Neff & Vonk, 2009). It has been suggested that individuals who lack the interpersonal schema that others are caring and safe are more likely to become self-critical, competitive, and social rank focused, which may lead to low compassion towards the self and others (Gilbert & Procter, 2006; Liotti & Gilbert, 2011). Consistently, maladaptive perfectionism has been found to be negatively associated with self-compassion (Lizmore et al., 2017; Mehr & Adams, 2016; Neff, 2003) and lower self-compassion is associated with elevated NA and greater use of maladaptive emotion regulation strategies to cope with failure (Neff, Hsieh, & Dejitterat, 2005). Taken together, research on self-compassion in maladaptive perfectionism provides, albeit indirect, evidence of lower mindfulness and self-awareness in maladaptive perfectionism. However, not all research supports a relationship between emotional awareness and maladaptive perfectionism. Specifically, a study investigating dysmorphic appearance concerns in men (Cunningham, Griffiths, Baillie, & Murray, 2018) and a study with a sample of outpatients receiving cognitive behavioral therapy (Montano et al., 2016) did not find an association between perfectionism and the emotional awareness subscale on the DERS. In sum, research suggests maladaptive perfectionists are poor at describing and identifying emotions as assessed by the LEAS and a measure of alexithymia. Further, research on mindfulness suggests that greater maladaptive perfectionism is associated with lower awareness of, and greater judgment and reactivity towards, one's thoughts, sensations, and emotions as well as lower self-compassion. However, the limited research on the relations between maladaptive perfectionism and the DERS suggests that perfectionism is unrelated to lack of emotional awareness. These mixed findings suggest that further research on emotional awareness in perfectionism is needed.

4.3. Problematic emotion regulation goals in maladaptive perfectionism

As discussed, emotions have the capacity to elicit action and lead to changes in behavior. When experiencing an emotion, people can modulate the emotional experience in line with emotion regulation goals. Adaptive emotion-regulation goals require considering the immediate and long-term consequences of a particular emotion. Emotion regulation goals that lead to short-term relief but negative consequences in the long-term would be considered maladaptive and likely to lead to emotion dysregulation (Cole & Hall, 2008; Gross & Jazaieri, 2014). Based on the expectancy-value model of emotion regulation, people can purposefully elicit or maintain emotions in ways that they perceive to be beneficial to them, consistent with their emotion-regulation goals (Tamir, Bigman, Rhodes, Salerno, & Schreier, 2015). For instance, hockey players may be motivated to express anger towards the opposing team due to the perception that this will improve their performance. Thus, when considering explicit emotion regulation goals, it is important to evaluate the individual's emotion motivations.

Research on emotional experiences in maladaptive perfectionism suggests that maladaptive perfectionists experience elevated NA that may be prolonged (e.g., Bieling et al., 2004; Dunkley et al., 2003; Flett et al., 2009; Frost et al., 1995). Based on the research on emotion regulation strategies summarized in the subsequent section of this paper, it is evident that maladaptive perfectionists are motivated to change their emotional experience at times. For instance, they may be motivated to suppress negative emotional reactions when around other people out of fear that others will criticize them. However, there may also be times at which maladaptive perfectionists are unmotivated to change from a state of NA. As mentioned, maladaptive perfectionists likely experience emotions of shame, guilt, and anger due to an interpersonal schema in which others are critical and unaccepting (Dimaggio et al., 2015; Hewitt, Flett, Mikail, Kealy, & Zhang, 2017). In an effort to gain the approval of others, they hold extremely high standards and are overly self-critical of themselves when their standards are not achieved (Aldea & Rice, 2006; Frost et al., 1990; Hewitt & Flett, 1991). As such, maladaptive perfectionists may believe that they deserve to feel bad for not attaining their goal and consequently may be unmotivated to change their affective state. Indeed, the associated self-criticism and self-deprecation is likely to prolong the NA.

It is also possible that maladaptive perfectionists are unmotivated to

change their NA based on the perception that negative emotions, such as anger, fear, and shame, promote effective goal attainment behaviors, which are believed to lead to acceptance and approval from others. For instance, there is evidence that people believe their negative emotions promote "workaholic" behaviors and that focusing on goal-attainment will improve negative mood over time (Bovornusvakool, Vodanovich, Ariyabuddhiphongs, & Ngamake, 2012). Some evidence for these beliefs in maladaptive perfectionism comes from the observation that perfectionists refrain from engaging in pleasurable activities when pursuing a goal (Shafran et al., 2002). While in the short-term, maintaining NA may have beneficial outcomes (e.g., perceived increased work productivity), maintaining NA is likely to lead to poor long-term consequences, such as poor work productivity (Lyubomirsky, King, & Diener, 2005), which may reduce the likelihood of goal attainment. Maintaining NA may also negatively impact one's quality of life, including one's well-being and social relationships and as such, reflects a maladaptive emotion regulation goal (Gross & Jazaieri, 2014). It has been observed that people are unlikely to purposefully pursue emotion regulation goals unless they are motivated to do so (Gyurak et al., 2011). Thus, in maladaptive perfectionism, beliefs about the functionality of negative emotions and one's deservingness to feel negatively may contribute to a lack of motivation to improve negative mood. On the other hand, there may be times when individuals are motivated to reduce their NA; however, research suggests maladaptive perfectionists engage in problematic emotion regulation strategies.

4.4. Problematic emotion regulation strategies in maladaptive perfectionism

Emotions can be implicitly and explicitly modulated in many ways, and there is considerable evidence to suggest that maladaptive perfectionists engage in problematic emotion regulation strategies that lead to emotion dysregulation. Given that the process model (Gross & Thompson, 2007) is the most widely cited model of emotion regulation (Webb, Miles, & Sheeran, 2012), and is the foundation of Gross and Jazaieri's (2014) framework of emotion dysregulation, emotion regulation failures will be considered at each stage of the process model.

4.4.1. Situation selection and modification

According to Gross and Thompson (2007), emotions can be modulated by selecting certain situations over others and changing external features of the environment. Given that maladaptive perfectionists set extremely high standards, they may seek out environments in which these high standards can be met. For instance, an individual with maladaptive perfectionism may pursue higher education to remain in an environment in which high standards can be attained. However, given that it may be difficult to attain the high standards, and any achievements are likely to be dismissed, maladaptive perfectionists are likely to experience frequent negative emotions in these environments. Moreover, selecting environments that facilitate the pursuit of high standards is likely associated with greater potential for setbacks and negative evaluation, which increase NA. Another consideration is that certain situations may be outside of the individual's control. For instance, maladaptive perfectionists often report having parents who are high in expectations and criticism (Frost et al., 1990; Vieth & Trull, 1999), which may foster negative emotions. Further, there is evidence that maladaptive perfectionists avoid or escape situational experiences involving high stress. Individuals with maladaptive perfectionism may avoid stressors by engaging in avoidant coping (i.e., behavioral and mental disengagement), and procrastination (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Hill, Hall, & Appleton, 2010; Santanello & Gardner, 2007; Sirois, Molnar, & Hirsch, 2017; Weiner & Carton, 2012; Xie, Yang, & Chen, 2018). Although these strategies may decrease NA in the short-term, they are likely to lead to negative long-term consequences (e.g., an increase in the discrepancy between one's goals and the current situation), and thus are considered maladaptive coping strategies (Dunkley et al., 2000; Sirois et al., 2017). Moreover, maladaptive perfectionists may lack support and skills to modify the situation and decrease NA. For instance, maladaptive perfectionists may avoid seeking social support to avoid admitting they are unhappy and disappointing others (Hewitt & Flett, 1991). There is also evidence that maladaptive perfectionists respond to stressful situations with a less active, problem-focused style to change the situation (Dunkley et al., 2000), which suggests that maladaptive perfectionists may lack resources to appropriately modify a stressful situation. Maladaptive perfectionists may also refrain from taking part in pleasurable activities that could reduce NA in an effort to remain dedicated to their pursuits (Shafran et al., 2002). In sum, these are some examples of ways in which maladaptive perfectionists may choose and modify environments that increase the likelihood of experiencing prolonged NA.

4.4.2. Attentional deployment

The emotion process model also posits that individuals can change their emotional response by changing the focus of their attention. There is evidence to suggest that individuals high in maladaptive perfectionism tend to direct their attention towards stimuli that elicit NA. For instance, individuals high in maladaptive perfectionism have been found to have a greater attentional bias for negative, perfectionism-related information compared to individuals low in maladaptive perfectionism (Howell et al., 2016; Shafran et al., 2002). For example, maladaptive perfectionists may focus on a single mistake that was made in a presentation as opposed to all the successes and positive feedback. Similarly, individuals high in perfectionistic automatic thoughts have been found to have greater recognition for negative information when in a negative mood state compared to when in a neutral state, and compared to those low in perfectionistic thoughts, which provides further support for the tendency to attend to and encode negative stimuli (Besser et al., 2008). Moreover, individuals high in maladaptive perfectionism engage in cognitive strategies that orient themselves towards negative, threatening information. For instance, greater maladaptive perfectionism is associated with greater rumination, that is, the tendency to repeatedly think about one's negative emotional experience, (e.g., Burns & Fedewa, 2005; Flett, Madorsky, Hewitt, & Heisel, 2002; O'Connor, O'Connor, & Marshall, 2007; Rudolph, Flett, & Hewitt, 2007) and worry (Santanello & Gardner, 2007; Stöber & Joormann, 2001). In a diary study that required participants to record mistakes, individuals high in maladaptive perfectionism reported greater rumination following mistakes compared to those low in maladaptive perfectionism (Frost et al., 1997). Maladaptive perfectionists are suggested to be at elevated risk of rumination and worry due to their high sensitivity to criticism and threat. They are likely to engage in these perseverative cognitive processes when thinking about failure, criticism, and the need to be perfect (Flett, Nepon, & Hewitt, 2016; Hewitt & Flett, 2002). Engaging in rumination and worry amplifies perceived inadequacies, prolongs NA, and can also prevent problem solving following a stressor (Flett et al., 2016; Lyubomirsky & Nolen-Hoeksema, 1995; Lyubomirsky, Tucker, Caldwell, & Berg, 1999). Further, the finding that higher maladaptive perfectionism is associated with lower mindfulness and present-moment awareness (James et al., 2015; Short & Mazmanian, 2013; Wimberley et al., 2016), conceptualized as adaptive emotion regulation strategies, suggest that maladaptive perfectionists fail to engage in adaptive attentional deployment strategies that could improve NA.

4.4.3. Cognitive change

In addition to redirecting one's attention to modulate emotion, the meaning of a situation can be re-evaluated to change its emotional impact. That is, individuals can change how they think about a situation to change their associated feelings. Maladaptive perfectionists have been found to fixate on fear of making mistakes, and are high in perfectionistic automatic thoughts that reflect the need to be perfect, concerns related to discrepancy between their goals and performance, and concerns about not achieving their standards (Flett, Hewitt,

Blankstein, & Gray, 1998). Furthermore, maladaptive perfectionists engage in "all-or-nothing" thinking, which is a rigid, maladaptive thinking style (e.g., I either get 100% on a test or I might as well have failed; Shafran et al., 2002) as well as catastrophizing, which involves exaggerating the significance and enormity of negative events (Rudolph et al., 2007). For instance, following a perceived failure, an individual with maladaptive perfectionism may view the failure to be greater than it is, and focus on potential negative outcomes and future implications as opposed to using more adaptive strategies, such as acceptance. Maladaptive perfectionism is also positively associated with higher self-blame, which involves attributing failures to oneself (Dunkley et al., 2000; Rudolph et al., 2007). Furthermore, there is evidence to suggest that maladaptive perfectionists are less likely to engage in adaptive cognitive change techniques, such as putting stressful events into perspective, positive reappraisal (Rudolph et al., 2007), and acceptance (Shafran et al., 2002). Collectively, there is evidence that maladaptive perfectionists fixate on negative thoughts and have distorted thought patterns that amplify NA and are less likely to engage in more adaptive thinking patterns.

4.4.4. Response modulation

Lastly, when experiencing an emotion, efforts can be made to alter one's emotional response to the situation. Several unhelpful emotion response tendencies have been noted in the perfectionism literature. For example, greater maladaptive perfectionism has been found to be associated with greater use of suppression (i.e., the inhibition of emotional responses; Perrone-McGovern, Simon-Dack, Beduna, Williams, & Esche, 2015). Maladaptive perfectionists may use suppression to avoid displaying a negative reaction to stress in front of others and to avoid appearing as though they have failed, disappointing others, or being subjected to negative evaluation by others (Rimes & Chalder, 2010). However, emotion suppression paradoxically leads to an increase in NA and physiological arousal and is associated with negative long-term outcomes including decreased positive emotion, emotional awareness, and life satisfaction (Gross & John, 2003). There is also preliminary evidence that individuals with maladaptive perfectionism are at-risk of using aggressive behavior as a method of reducing their NA and associated distress (Chester, Merwin, & DeWall, 2014). Indeed, an increased predisposition to aggressive behavior is conceivable in light of the evidence that maladaptive perfectionists experience elevated NA in response to failure and engage in unhelpful coping strategies, such as suppression and avoidance. It has been suggested that engaging in suppression and avoidance increases the likelihood of aggression by further elevating NA, which depletes available resources (Roberton, Daffern, & Bucks, 2012). Although aggression is commonly perceived to relieve distress, using aggression to modulate emotions can have negative long-term consequences on one's well-being, such as social disconnectedness (Lochman, Barry, Powell, & Young, 2010). Lastly, there is evidence supporting that maladaptive perfectionists engage in external means of regulating negative emotions or distracting themselves, including self-harm (Chester et al., 2014; Yates, Tracy, & Luthar, 2008), and using alcohol to cope (Rice & Van Arsdale, 2010). Thus, there is evidence to suggest that maladaptive perfectionists engage in unhelpful, response-focused, emotion regulation strategies.

Collectively, there is support for emotion misregulation (e.g., procrastinating an assignment is likely to increase NA and lead to poor performance) and emotion regulation failures (e.g., using aggression and suppression to cope with NA) in maladaptive perfectionism, which increase vulnerability to emotion dysregulation. Based on the information reviewed herein, a model of these components of emotion dysregulation in maladaptive perfectionism is proposed.

5. A conceptual model of emotion dysregulation in maladaptive perfectionism

Based on evidence that the components of emotion dysregulation suggested by Gross and Jazaieri (2014) are implicated in maladaptive perfectionism, a model of emotion dysregulation in maladaptive perfectionism was developed (see Fig. 1). Given that maladaptive perfectionists feel driven to achieve high standards to protect themselves from rejection and criticism (Dimaggio et al., 2015), it is posited that threatened perfectionistic standards (e.g., through criticism, perceived failure) lead to an increase in NA. Elevated NA combined with poor emotional awareness may contribute to unhelpful emotion regulation strategies in maladaptive perfectionism by minimizing the individual's repertoire and accessibility of helpful strategies (Eisenberg et al., 2000; Fredrickson, 1998). Further, low emotional awareness may contribute to unhelpful emotion regulation goals as insight into one's emotional experience, and the context, are important to judiciously weigh the short- and long-term consequences of an emotion regulation goal. Unhelpful emotion regulation strategies may occur implicitly (i.e., brought on automatically with minimal awareness), or explicitly (i.e., effortful attempts to change one's emotional experience; Gyurak et al., 2011) and, at times, emotion regulation strategies are used in accordance with the individual's emotion regulation goals (e.g., using suppression to dampen negative emotions following a class test to avoid appearing imperfect and incompetent to others). It is also speculated that there may be times when maladaptive perfectionists are unmotivated to change their affective state. For instance, individuals may hold the belief that they deserve to feel bad following failure or that feeling bad will increase work productivity. Lack of motivation to improve NA is thus likely to have a number of negative short-term implications including decreasing one's problem solving, attention, and physical health, and consequently decreasing the likelihood of obtaining one's long-term goals (Lyubomirsky et al., 2005). As such, maintaining NA would be maladaptive, as it acts as a barrier in attaining the ultimate goal. As suggested by Gross and Jazaieri (2014), low emotional

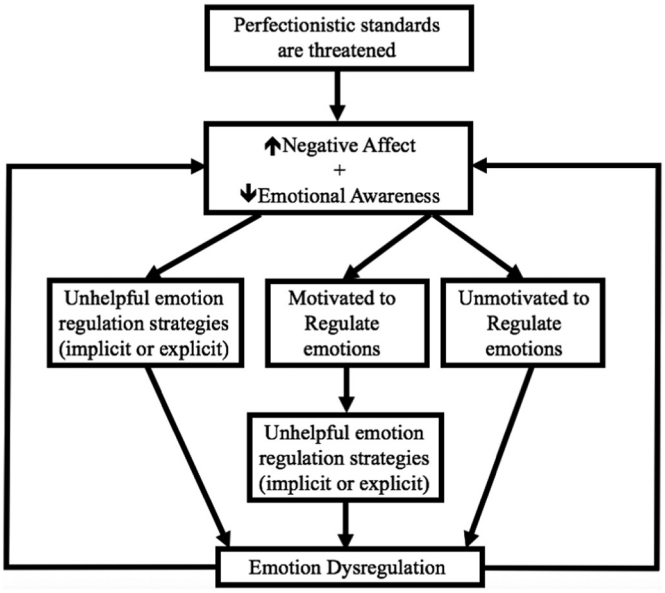

Fig. 1. When perfectionistic standards are threatened, maladaptive perfectionists experience heightened and prolonged NA. In response to the elevated NA, the individual may engage in implicit emotion regulation (i.e., strategies that occur automatically and outside of awareness) or explicit emotion regulation (i.e., strategies that are purposeful and within one's awareness), which may or may not be directly related to their long-term emotion regulation goals. The emotion regulation strategies are likely to lead to emotion dysregulation and elevated NA. At times, maladaptive perfectionists may also be unmotivated to regulate their emotions, depending on their beliefs about negative emotions and their emotion regulation goals. Poor emotional awareness is suggested to contribute to unhelpful implicit and explicit emotion regulation strategies and poor emotion regulation goals, all of which contribute to emotion dysregulation and elevated NA in maladaptive perfectionism.

awareness, poor emotion regulation strategies, and unhelpful emotion regulation goals likely lead to emotion dysregulation, which, in turn, contributes to the elevated NA observed in maladaptive perfectionism (Aldea & Rice, 2006; Dunkley et al., 2003).

6. Implications, limitations, and future directions

This paper reviewed evidence of emotion dysregulation in maladaptive perfectionism and proposed a conceptual model based on the components of emotion dysregulation suggested by Gross and Jazaieri (2014) to be relevant to clinical conditions. The evidence of emotion dysregulation reported herein corroborates preliminary research on emotion dysregulation in perfectionism (e.g., Aldea & Rice, 2006; Montano et al., 2016). However, prior to jumping to investigations of "emotion dysregulation" in perfectionism, which is a complex, multidimensional term, it is important to consider specific components of emotion dysregulation that contribute to maladaptive perfectionism and their interactions. It is important to note that there may be other components of emotion dysregulation that are relevant for maladaptive perfectionism other than what are reviewed in this paper and that alternative models cannot be ruled out. However, the proposed model is a starting point from which to consider emotion dysregulation in maladaptive perfectionism on a more nuanced level. The most convincing evidence for emotion dysregulation comes from research showing that maladaptive perfectionists have maladaptive emotional experiences (e.g., heightened NA in response to negative and positive stimuli) and that they use unhelpful emotion regulation strategies at each stage of the process model. This paper provides some evidence for poor emotional awareness and poor emotion regulation goals in maladaptive perfectionism; however, further research is needed to refine our understanding of these components in maladaptive perfectionism. Moving forward, it will be critical to further investigate the components of the proposed model as well as the relationships among the components. Causal links between the components have not been examined; however, it is likely that the components of emotion dysregulation share bidirectional or multidirectional connections. Further, it is likely that a feedback loop exists such that maladaptive patterns of emotional responding lead to greater emotion dysregulation, which contributes to maladaptive emotional responding.

The delineation of emotion dysregulation in maladaptive perfectionism sheds light on potential treatment targets. Currently, CBT protocols used in the treatment of maladaptive perfectionism (e.g., Shafran et al., 2018) target maladaptive emotional experiences through cognitive and behavioral strategies. Examples of treatment targets include learning to recognize and label emotions, challenging perfectionistic thinking and learning adaptive cognitive strategies (e.g., cognitive reappraisal), and changing maladaptive behaviors that lead to increased NA (e.g., preventing procrastination). CBT has been found to be effective at improving perfectionism and associated psychological symptoms (Arpin-Cribbie et al., 2008; Pleva & Wade, 2007; Radhu, Daskalakis, Arpin-Cribbie, Irvine, & Ritvo, 2012), which provides indirect support for emotion-related treatment targets.

Treatment for perfectionism has also been proposed based on Hewitt, Flett, and Mikail's (2017) dynamic-relational treatment model. This model is grounded in a psychodynamic interpersonal framework that emphasizes the role of unmet attachment needs in the development and maintenance of perfectionism. Within this framework, unmet needs lead to an increase in NA, which perpetuates strategies, or defenses, such as striving to appease others, to protect one's self-esteem and in an effort to fulfill the unmet need. As such, treatment involves identifying the individual's unmet needs, associated affect, and strategies that have arisen to cope with these unmet needs. Early on in treatment, the aim is to facilitate the surfacing and labelling of emotions related to the unmet need. Once rapport has been established, treatment involves deepening affective experiences in an effort to change needs and maladaptive defenses. Another way that maladaptive interpersonal schemas are modified is by challenging the patient's beliefs about others through patient-therapist interactions in session (Hewitt, Flett, Mikail, Kealy, & Zhang, 2017). Thus, treatment stemming from a dynamic-relational treatment model also highlights the importance of identifying and modifying affect and problematic coping strategies. Unmet attachment needs and underlying schemas may also shed light on important affective treatment targets.

Maladaptive perfectionists may also benefit from mindfulness-based therapies, such as Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 2013) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2013), to improve present-moment awareness, which is critical to improve emotion awareness, emotion regulation goals, and to select appropriate emotion regulation strategies (Gross & Jazaieri, 2014). A recent study found support for the efficacy of an 8-week MBCT program at reducing perfectionism and stress relative to a condition that received CBT psychoeducation (James & Rimes, 2018). Interestingly, it has also been found that providing psychoeducation and feedback about one's perfectionism leads to significant decreases in not only perfectionism, but also emotion reactivity, compared to participants who do not received feedback (Aldea, Rice, Gormley, & Rojas, 2010). This suggests that emotion reactivity can be improved in maladaptive perfectionism, even using simple interventions, such as providing psychoeducation.

Other intervention strategies that may be useful in the treatment of maladaptive perfectionism include enhancing distress tolerance, increasing positive emotions through activity scheduling, and learning helpful emotion regulation strategies, such as seeking out social support when distressed. Assessment of the individual's perfectionistic behaviors and coping strategies is important to match the most effective treatment strategy. For instance, if the individual is engaging in emotional suppression then a treatment focus may include increasing the individual's acceptance and tolerance of negative emotions through mindfulness and/or distress tolerance. One of the most pervasive negative emotions that is avoided by perfectionists is shame (Ashby et al., 2006; Chen, Hewitt, & Flett, 2015). As such, it is important that treatment focuses on self-acceptance, possibly through bolstering self-compassion and adaptive coping following unmet standards (Hewitt, Flett, Mikail, Kealy, & Zhang, 2017). Further, exposure to distressing and uncomfortable emotions should be included in treatment to improve emotional avoidance. It is important to be attuned to avoidance strategies (e.g., censuring, rationalization) that may be used during exercises that involve exploring negative emotions, including therapeutic exposures (Hewitt, Flett, Mikail, Kealy, & Zhang, 2017). Lastly, given the overlapping features between perfectionism and personality disorders (e.g., maladaptive interpersonal schemas, emotion dysregulation) and evidence that they commonly co-occur (Dimaggio et al., 2018), it is important to assess and conceptualize the contribution of personality pathology to emotion dysregulation in perfectionism.

The proposed model of emotion dysregulation may also have implications for understanding relations between perfectionism and psychopathology. Maladaptive perfectionism has been proposed as a transdiagnostic factor that contributes to the development and maintenance of disorders characterized by emotion dysregulation (Egan et al., 2011; Shafran & Mansell, 2001). It is suggested that perfectionism leads to the development or exacerbation of psychological distress due to high negative reactivity and poor emotion regulation strategies (Aldea & Rice, 2006; Dunkley et al., 2003). Consistently, components of emotion dysregulation that have been suggested to contribute to psychopathology overlap with the components proposed to be implicated in maladaptive perfectionism. For instance, models of emotion dysregulation in mood and anxiety disorders highlight the role of elevated NA, poor emotional awareness, negative reactions to emotions, and poor emotion regulation strategies in emotion dysregulation (Hofmann et al., 2012; Mennin, Holaway, Fresco, Moore, & Heimberg, 2007). Thus, it is possible that individuals with greater maladaptive perfectionism are at a greater risk of developing psychological distress and

psychological disorders due to emotion dysregulation. It is also possible that components of emotion dysregulation in maladaptive perfectionism can be accounted for by the comorbidity with psychological disorders. Further research is needed to investigate whether any components of emotion dysregulation are unique to maladaptive perfectionism. It is likely that the broad categorizations of components of dysregulation in various models of emotion dysregulation apply to most forms of dysfunction and that more refined conceptualizations and measures of emotion dysregulation are needed to determine whether specific aspects of emotion dysregulation are unique to certain types of dysfunction. Understanding components of emotion dysregulation that are unique to certain types of dysfunction may lead to more targeted interventions. Further research is needed to understand how the components of emotion dysregulation interact with each other in their prediction of maladaptive perfectionism and psychopathology.

Although this paper contributes to our understanding of emotion dysregulation in maladaptive perfectionism, it is not without limitations. Much of the research on perfectionism and emotion dysregulation reviewed herein was cross sectional and used self-report measures, and a majority of the perfectionism research was conducted using college samples, which limits the generalizability of the findings on perfectionism and affect. As such, future research should use other research designs (e.g., experimental designs and ecological momentary assessment) and more diverse samples to investigate emotion and emotion dysregulation in perfectionism. For instance, it would be fruitful to examine maladaptive perfectionists' acceptance of, reaction to, and understanding of their emotional experience following a negative and positive mood induction compared to individuals low in perfectionism. Another valuable approach to investigating emotional responding in perfectionism would be to assess for changes in psychophysiological measures, such as indices of autonomic arousal, in response to mood inductions and stressors. However, the most comprehensive empirical support for emotion dysregulation in perfectionism will likely come from studies that employ multiple measures of emotional reactivity and regulation.

Another limiting factor in this review is the limited consensus on conceptualizations of perfectionism. Various definitions and measures of perfectionism are used in the literature as a result of the diverse conceptualizations, which can act as a barrier when trying to synthesize research. In this paper, a categorical conceptualization of perfectionism was adopted. Although a large body of research supports that perfectionism is best conceptualized by a two-factor model (i.e., adaptive and maladaptive factors; see Stoeber & Otto, 2006 for a review), there are limitations of this conceptualization. One consideration is that the results of the factor analyses may be influenced by the way in which the measure items are worded. That is, some items are worded such that they lend themselves to being interpreted as more positive and adaptive (e.g., the item “I am very good at focusing my efforts on attaining a goal” from the personal standards subscale of the MPS-F and the item “I am an organized person” from the need for organization subscale of the MPS-F). Similarly, positive correlations between adaptive perfectionism and positive traits may be attributable, in part, to content overlap between the items on the adaptive perfectionism scales and the items on the outcome measures (e.g., greater conscientiousness and lower procrastination; Stoeber & Otto, 2006). Further, there is the possibility that all dimensions of perfectionism could be maladaptive depending on their intensity. For instance, the extent to which items on the perfectionistic strivings scale (e.g., “It is important to me that I be thoroughly competent in everything I do.” and “I expect higher performance in my daily tasks than most people.”) are adaptive may depend on the degree to which they are characteristic of the individual. In addition to the divergent conceptualizations of perfectionism, there are several models of emotion dysregulation and debate as to whether emotion-related constructs, such as emotion and emotion regulation, are distinct (Campos, Frankel, & Camras, 2004; Kappas, 2011). Integration of ideas and constructs in the fields of perfectionism and emotion will be important in helping research to move forward on a unified front.

Further research is needed to test various constituents of the model proposed herein as well as to build on our understanding of emotion dysregulation in perfectionism. In particular, further research investigating emotion awareness is warranted. Majority of the support for low emotional awareness in maladaptive perfectionism was based on correlational research that used measures related to emotional awareness (i.e., mindfulness and alexithymia). Further research that uses performance-based measures of emotional awareness (e.g., the LEAS) and that investigates the relationship between emotional awareness and emotion regulation goals and strategies would be fruitful. Future research could also investigate the effect of mindfulness training on emotional awareness and self-compassion in maladaptive perfectionism. In addition, research on emotion-regulation goals in maladaptive perfectionism is needed. Specifically, research on beliefs about emotional experiences and the circumstances under which maladaptive perfectionists may be motivated or unmotivated to change their emotional state could inform our understanding of emotion regulation goals. Additional research on implicit and explicit emotion regulation is needed both in the literature broadly and to advance our understanding of emotion regulation in maladaptive perfectionism. Elucidating the role of implicit emotion regulation strategies in emotion dysregulation could have implications for treatment. For instance, paradigms that repeatedly train more adaptive strategies have been found to improve unhelpful implicit emotion regulation strategies (Gyurak et al., 2011). In addition, longitudinal studies should be conducted to assess the direction of the relationship between perfectionism and emotion dysregulation. It is also possible that a third variable (e.g., neuroticism) may account for the relationship between maladaptive perfectionism and emotion dysregulation.

Although this review paper focused on evaluating emotion dysregulation in maladaptive perfectionism, comparing emotion dysregulation in maladaptive and adaptive perfectionism may be a worthwhile future direction. Based on research suggesting that adaptive perfectionism is associated with more PA and adaptive coping in response to stressors, individuals higher in adaptive perfectionism may use more adaptive emotion regulation strategies, compared to those high in maladaptive perfectionism (Aldea & Rice, 2006). As such, adaptive perfectionists may be less vulnerable to emotion dysregulation, which may explain why adaptive perfectionism is associated with fewer negative outcomes compared to maladaptive perfectionism. Lastly, research is needed to elucidate the relationship between emotion related processes and other cognitive, behavioral, and interpersonal processes. Understanding interactions between these phenomena will further our understanding of maladaptive perfectionism.

6.1. Conclusions

This paper critically considered evidence of emotion dysregulation in maladaptive perfectionism based on the components of emotion dysregulation suggested by Gross and Jazaieri (2014) to be implicated in clinical conditions. Further, a model of the components of emotion dysregulation in maladaptive perfectionism was proposed that suggests that maladaptive perfectionists experience heightened NA in response to threatened standards and that elevated NA combined with low emotional awareness contributes to unhelpful emotion regulation goals, and maladaptive implicit and explicit emotion regulation strategies, all of which contribute to emotion dysregulation and elevated NA in maladaptive perfectionism. Considering emotion dysregulation at a nuanced level is an important step to advancing our understanding of this complex phenomenon in clinical conditions.

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Contributors

Bailee Malivoire developed the idea for this review paper, conducted the literature review, and wrote the first draft of the paper. Drs. Martin Antony and Janice Kuo contributed to the manuscript and the development of the model. All authors approved the final manuscript.

Declaration of interest

The authors declare that they have no conflict of interest.

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