

WHEN BEING IMPERFECT JUST WON'T DO:
EXPLORING THE RELATIONSHIP BETWEEN PERFECTIONISM AND
SUICIDALITY

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When Being Imperfect Just Won't Do: Exploring the Relationship Between
Perfectionism and Suicidality

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Abstract

The current study aimed to increase understanding of the relationship between perfectionism and various forms of suicidality, as well as explore potential pathways that account for the relationship. 130 university students completed measures of perfectionism, shame, difficulties with emotion regulation, self-compassion, depression severity, and hopelessness, as well explicit and implicit measures of suicidality. Results indicated that adaptive and maladaptive perfectionism were not uniquely associated with implicit and explicit suicidality. However, when not controlling for depression severity and hopelessness, higher levels of maladaptive perfectionism were associated with heightened explicit suicidality. Furthermore, results indicated that shame significantly mediated the relationship between maladaptive perfectionism and explicit suicidality. Implications for understanding the link between perfectionism and suicidality are discussed, as are potential clinical implications for reducing suicidality amongst perfectionistic individuals.

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When Being Imperfect Just Won't Do:

Exploring the Relationship Between Perfectionism and Suicidality

In Canada, and throughout the world, suicide is a major public health problem. Suicide is among the leading causes of premature deaths, accounting for approximately 804,000 deaths worldwide (World Health Organization, 2012) and 3,890 deaths in Canada (Navaneelan, 2012), per year. Suicide is an especially problematic issue amongst adolescents and young adults. For instance, within Canada, amongst individuals aged 15-24, suicide is the second leading cause of death, accounting for 24% of all deaths (Statistics Canada, 2009). In addition to the tragic loss of life that suicide entails, suicide leaves the loved ones of the deceased with immense psychological distress (Jamison, 2011) and feelings of guilt and responsibility for the death of their beloved (Maple, Edwards, Plummer, & Minichiello, 2010). Indeed, it has been suggested that a single suicide intimately affects up to 28 individuals (Knieper, 1999) and that suicide bereavement is especially distressing and difficult on family functioning (Jordan, 2001). Moreover, suicide and suicide attempts carry with them a great financial burden, costing the Canadian health care system alone approximately \$2.9 billion annually (Parachute, 2015). Given the already enormous burden that suicide represents, it is alarming to note that suicide rates have been increasing (World Health Organization, 2011) and that the burden due to suicide is projected to increase over the coming years (Mathers & Loncar, 2006). Given the tragic loss of life and the heavy burden that suicide has on society, efforts to prevent suicide require both improved methods of 1) identifying at-risk individuals and 2) a greater understanding of the underlying psychological factors leading to suicide. To this end, the primary aims of this thesis were to: 1) examine the relationship between suicide and perfectionism and 2) examine several key pathways that explain their relationship.

Suicidal Behaviours and the Spectrum of Suicidality

Suicide is a final act that is most often preceded by a wide range of suicidal behaviours. Researchers therefore describe risk of committing suicide on a spectrum of suicidality, wherein each step places individuals at increased risk of ultimately committing suicide (Kessler, Berglund, Borges, Nock, & Wang, 2005). Included within this spectrum of suicidality are behaviours such as: (a) *suicide attempts*, which refer to engaging in self-injurious behaviours with at least some intent of dying, (b) *suicide plans*, which refer to formulating specific methods through which one intends to die and (c) *suicide ideation*, which refers to thoughts about engaging in behavior intended to end one's life (Nock, Borges, Bromet, Cha et al., 2008; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007).

After the completion of suicide itself, suicide attempts are considered the second most extreme version of suicidality. Indeed, whether an individual has attempted suicide in the past and the number of past attempts are among the greatest predictors of whether an individual will die by suicide (Borges et al., 2006; Joiner et al., 2005; Tidemalm, Långstrom, Lichtenstein, & Runeson, 2008). Moreover, research suggests that approximately half of those who commit suicide have previously attempted suicide and that as many as 15% of individuals who attempt suicide will eventually die by suicide (Hawton & van Heeringen, 2009). Given that the estimated lifetime prevalence of attempting suicide is 2.7% (Nock, Borges, Bromet, Cha et al., 2008), and that for every completed suicide there are estimated to be 25 suicide attempts (Goldsmith, Pellmar, Kleinman, & Bunney, 2002), these rates are alarming.

Moreover, a wealth of evidence suggests that suicidal ideation and making a suicide plan places individuals at increased risk of eventually committing suicide. Surveys conducted worldwide have suggested that the lifetime prevalence of making a suicide plan is 3.1% (Nock,

Borges, Bromet, Alonso et al., 2008) and that suicidal ideation occurs among 2.3% to 14.1% of the population (Cougle, Keough, Riccardi, & Sachs-Ericsson, 2009; Gunnell, Harbord, Singleton, Jenkins, & Lewis, 2004; Nock, Borges, Bromet, Alonso et al., 2008; ten Have et al., 2009). These statistics are troubling, given that amongst those with a suicide plan, there is a 56% probability of attempting suicide (Nock, Borges, Bromet, Alonso et al., 2008). Moreover, among individuals with suicidal ideation, the conditional probability of making plans to commit suicide is 33.6%. Even for those with suicidal ideation, but without a plan to commit suicide, the probability of committing suicide remains high, at 15.4%. Finally, 60% of the time, the transition from suicide ideation to attempting suicide occurs within the first year of the onset of suicidal ideation (Nock, Borges, Bromet, Alonso et al., 2008).

Thus, suicidality is a widespread issue that requires increased scientific attention, as a greater understanding of suicidality will contribute toward suicide prevention efforts. Given the immense risk associated with the suicidal behaviours that make up the spectrum of suicidality and the importance of identifying potentially suicidal individuals early on, the term suicidality will herein be used to describe all forms of suicidal behaviours.

Risk Factors of Suicidality

In order to improve scientific understanding of the causes of suicidality and inform suicide prevention efforts, research has begun to identify important variables that contribute to suicidality. Research has shown that psychological variables are a key factor that contribute to suicidality (Brown, Beck, Steer, & Grisham, 2000). Identifying psychological factors that contribute to suicidality is particularly important because psychological factors may be targeted by therapy (Brown et al., 2000) and are, therefore, in theory, preventable once identified. Until recently, efforts to prevent suicide have often considered suicide a secondary target and have

primarily targeted mental disorders, including depression (Thomson, 2012) and substance abuse (Sher, 2006), as a means of preventing suicide (Cavanagh, Carson, Sharpe, & Lawrie, 2003). However, this model of suicide prevention is seriously limited in its utility, given that many instances of suicide occur in the absence of diagnosed mental disorders (Judd, Jackson, Komiti, Bell, & Fraser, 2012). Furthermore, research has suggested that treatments that primarily target disorders (e.g., depression), rather than directly targeting suicidality itself, often fail to result in reduced rates of suicide (Ward-Ciesielski & Linehan, 2014). In contrast, interventions that specifically target suicidality have been shown to effectively reduce suicide rates (Brown & Jager-Hyman, 2014). Therefore, an improved understanding of the transdiagnostic risk factors associated with suicidality, beyond those accounted for by diagnoses of mental disorders, is necessary for improved suicide prevention efforts (Hjelmeland, Dieserud, Dyregrov, Knizek, & Leenaars, 2012; Mann, Waternaux, Haas, & Malone, 1999). Based on this understanding of suicidality and suicide prevention, research has begun to explore transdiagnostic factors that place individuals at risk of committing suicide, including neuroticism (Brezo, Paris, & Turecki, 2006), hopelessness (Brezo et al., 2006; Brown et al., 2000; Cox, Enns, & Clara, 2004) and perfectionism (Johnson, Wood, Gooding, Taylor, & Tarrier, 2011).

Perfectionism and Suicidality

“But it's the little things, the little things, not expectations, that make life worth living”

(JJ Grey & Mofro, The Sun Is Shining Down)

Though perfectionism has begun to receive attention for its role in amplifying suicide risk, the relationship between perfectionism and suicidality continues to be underappreciated and requires further attention (Flett, Hewitt, & Heisel, 2014). Furthermore, in comparison with other transdiagnostic risk factors, little is known about the reasons perfectionism is associated with

suicidality and no evidence-based interventions for targeting suicidality amongst perfectionistic individuals yet exist. Therefore, improving upon understanding the association between perfectionism and suicidality, as well the reasons they are related, may help to alleviate suicide risk amongst perfectionistic individuals.

Though operationalized in various ways, perfectionism is conceptualized as a psychological trait that is characterized by high levels of self-criticism, obsession over failures, and concern with failing to live up to high expectations and standards (Bell, Stanley, Mallon, & Manthorpe, 2010; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991). Perfectionism has been described as a transdiagnostic construct and has similarly been identified as a risk and maintenance factor for multiple psychological disorders, including eating disorders, anxiety disorders, and depression (Egan, Wade, & Shafran, 2011). Recently, multiple case studies of nonclinical individuals who have committed suicide have identified perfectionism as a key factor that contributed toward their suicide (Bell et al., 2010; Kiamanesh, Dieserud, Dyregrov, & Haavind, 2015; Kiamanesh, Dyregrov, Haavind, & Dieserud, 2014; Kiamanesh, Dieserud, & Haavind, 2015). Furthermore, a review of 29 studies found a significant relationship between aspects of perfectionism and suicidality within both clinical and nonclinical populations (O'Connor, 2007). However, this review found that, while some dimensions of perfectionism are associated with suicidality, others are not. A greater understanding of the differing dimensions of perfectionism is, therefore, necessary for a nuanced understanding of the relationship between perfectionism and suicidality.

Hewitt and Flett's Multidimensional Model of Perfectionism. One of the most prominent models of perfectionism was proposed by Hewitt and Flett (1991). This multidimensional model of perfectionism divides perfection into three social dimensions: self-

oriented perfectionism (SOP), socially prescribed perfectionism (SPP), and other-oriented perfectionism (OOP) (Hewitt et al., 1991). SOP is defined as having a strong personal motivation to be perfect, engaging in all-or-nothing thinking, and having high expectations for one's self. SPP is defined as the extent to which individuals feel that others have unrealistically high expectations of them and that others will not be accepting of them should they fail to achieve such expectations. OOP is defined as the degree to which individuals have excessively high standards for other people.

To date, research on the relationship between suicidality and these dimensions of perfectionism has been mixed, with some studies finding that the relationship between components of perfectionism and suicidality to be unique (i.e., over and above other common predictors of suicidality, such as depression severity and hopelessness), while others do not. Determining the relationship between components of perfectionism and suicidality, and whether these relationships are unique, is important as it informs as to whether perfectionism itself ought to be targeted within prevention and intervention efforts for suicide.

Studies consistently report a relationship between SPP and suicidality. For instance, Hewitt, Flett, and Weber (1994) reported that SPP was significantly correlated with suicidal ideation amongst psychiatric patients and within a college sample, even after controlling for hopelessness. These findings were replicated in a child psychiatric population (Hewitt, Newton, Flett, & Callander, 1997). Studies amongst college students have also found a relationship between SPP and suicidal ideation, with some reporting that SPP uniquely predicts suicidal ideation (Dean, Range, & Goggin, 1996). Additionally, a study by Hewitt, Flett, and Turnbull-Donovan (1992) found that, even after controlling for hopelessness and depression, SPP was significantly correlated with suicidal intent, within a clinical population. Similarly, a study of 39

inpatients with alcoholism tested whether perfectionism was predictive of past suicide attempts and found that higher levels of SPP was uniquely associated with having a past suicide attempt (Hewitt, Norton, Flett, Callander, & Cowan, 1998). Furthermore, one study found that high levels of SPP uniquely differentiated the patients who had attempted suicide from those who had not (Hunter & O'Connor, 2003). In contrast, additional studies have found that there is indeed a relationship between SPP and suicidality, but that this relationship is not unique. For instance, within a university population, SPP did not predict additional variance of suicidality above and beyond depression and hopelessness (Dean & Range, 1996). Similarly, using structural equation modeling, one study in a clinical outpatient population found that SPP was not directly associated with suicidal ideation (Dean & Range, 1999). Rather, path analysis indicated that SPP was associated with suicidal ideation through the path of depression, which was in turn associated with suicidal ideation through the path of hopelessness (Dean & Range, 1999). Thus, while multiple lines of research have suggested a consistent relationship between SPP and suicidality, there are mixed findings regarding the uniqueness of the relationship between SPP and suicidality. Reasons for these mixed findings are unclear and therefore suggest that additional research is necessary to determine whether the relationship between SPP and suicidality is unique.

Results from studies on the relationship between SOP and OOP and suicidality have similarly been inconsistent (Hewitt, Flett, Sherry, & Caelian, 2006). For instance, it has been reported that high levels of SOP uniquely predict suicidal ideation amongst adult (Hewitt et al., 1994) and child psychiatric patients (Hewitt et al., 1997), as well as amongst college students (Hewitt et al., 1994). However, other studies have failed to replicate this finding, reporting that SOP is not significantly associated with suicidal ideation (Dean et al., 1996), suicidal intent

(Hewitt et al., 1992) and past suicide attempts (Hewitt et al., 1998). Interestingly, some studies have suggested that OOP may function as a *protective* factor against suicidality. One study found that, within an alcoholic inpatient sample, those without a history of suicide attempts had higher levels of OOP than those with a history of suicide attempts (Hewitt et al., 1998). Blankstein, Lumley and Crawford (2007) also found that OOP was associated with hopelessness and suicide ideation amongst men, but not amongst women. Similarly, amongst individuals who engage in deliberate self-harm, a strong predictor of suicide (Sakinofsky, 2000), high levels of OOP were negatively associated with hopelessness and positively associated with positive future (Hunter & O'Connor, 2003), further suggesting that OOP may function as a *protective* factor against suicidality. The authors interpret these findings in line with Baumeister's (1990) escape theory of suicide and suggest that the protective influence of OOP may be attributable to such individuals' attention and blame being directed toward others rather than chronically experiencing aversive self-awareness. Similarly, they suggest that these findings may be in line with the cry of pain hypothesis (Williams, 2001; Williams & Pollock, 2001), which suggests that individuals with low expectations of others (low OOP) and perceived high expectations from them (high SPP), are more likely to perceive themselves as failures, and therefore likely to turn toward suicide. However, little empirical or theoretical support is provided for either of these explanations of the protective influence of OOP. Therefore, to date, not enough research has been conducted to determine whether, and why, OOP might function as a buffer against suicidality. Thus, while there appears to be a consistent, though not necessarily unique, relationship between SPP and suicidality, the relationship between suicidality and both SOP and OOP remains unclear.

Frost's Multidimensional Model of Perfectionism. In contrast with Hewitt and Flett (1991), Frost and colleagues (1990) proposed an alternative multidimensional model of

perfectionism. Frost's model incorporates six dimensions of perfectionism, including concern over mistakes (CM), parental expectations (PE), parental criticism (PC), doubts about actions (DA), personal standards (PS), and organization (O). CM is a measure of an individual's negative reactions to mistakes and tendency to interpret mistakes as failures. PE refers to individuals' perception of one's parents' high expectations. PC represents an individual's perception of their parents' negative evaluation. DA represents the extent to which an individual is concerned with doing things properly and satisfaction with one's performance. PS represents a tendency to set and maintain high standards for oneself and to evaluate oneself based on performance. O is a measurement of individuals' neatness and conscientiousness.

Past research has found that CM and DA are associated with suicidal ideation and suicide proneness, amongst American university students (Adkins & Parker, 1996). Similarly, in a study with Australian university students, Hamilton and Schweitzer (2000) found significantly higher levels of CM and DA amongst individuals with suicidal ideation, and Chang (1998) similarly found a relationship between suicidal ideation and CM and DA amongst Caucasian Americans. Other dimensions of Frost's model of perfectionism, however, are not consistently found to be associated with suicidality (Adkins & Parker, 1996; For a review, see O'Connor, 2007).

Adaptive and Maladaptive Perfectionism. While some have argued that perfectionism is by definition a negative trait (Flett & Hewitt, 2006; Pacht, 1984), others have maintained that some aspects of perfectionism may consist of positive psychological traits (Hamachek, 1978; Slade & Owens, 1998; Stoeber & Otto, 2006). For instance, while SPP appears to be primarily associated with maladaptive outcomes, many have suggested that SOP is associated with both adaptive and maladaptive outcomes (Bieling, Israeli, & Antony, 2004; Klibert, Langhinrichsen-Rohling, & Saito, 2005). Similarly, it has been suggested that certain dimensions of Frost's

model of perfectionism may be positive (O and PS), while others are primarily negative (CM, PE, PC and DA). In order to better operationalize perfectionism and differentiate between its positive and negative forms, many researchers now differentiate between adaptive perfectionism (also called personal standards perfectionism) and maladaptive perfectionism (also called evaluative concerns perfectionism) (Bieling et al., 2004; Blankstein & Dunkley, 2002; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Enns, Cox, Sareen, & Freeman, 2001; Stoeber & Otto, 2006). Adaptive perfectionism has generally been found to be associated with positive outcomes, including higher self-esteem (Blankstein, Dunkley, & Wilson, 2008) and goal commitment (Flett, Sawatzky, & Hewitt, 1995). Maladaptive perfectionism, on the other hand, is associated with numerous negative outcomes, including anorexia nervosa (Bastiani, Rao, Weltzin, & Kaye, 1995), social anxiety (Juster et al., 1996), insomnia (Lundh, Broman, Hetta, & Saboonchi, 1994) depression severity, hopelessness, and suicidal ideation (Enns et al., 2001). Factor analyses using both Flett and Hewitt's (1991) 3 dimensions of perfectionism and Frost and colleagues' (1990) six dimensions have suggested that these measures yield two significant factors, which map onto adaptive and maladaptive conceptions of perfectionism (Bieling et al., 2004; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). Maladaptive perfectionism is characterized by having high standards, being concerned with making mistakes, doubting one's actions, and SPP; adaptive perfectionism is characterized by having high standards, being conscientious, and in the absence of SPP, is associated with SOP. Thus, research to date suggests that composite scores of maladaptive perfectionism are associated with negative outcomes, while composite scores of adaptive perfectionism are associated with positive outcomes. However, little research has explored the relationship between composite scores of maladaptive and adaptive perfectionism and suicidality, specifically. Furthermore, research has not yet examined

whether the relationship between composite scores of adaptive and maladaptive perfectionism with suicidality are unique, or can be accounted for by other variables known to be associated with suicidality (e.g., depression severity and hopelessness). Thus, given the varying ways that perfectionism itself is conceptualized and measured, further research is necessary to clarify the relationship between perfectionism and suicidality.

Challenges with Measurement and Identification of Suicidality amongst Perfectionistic Individuals

In addition to the issues regarding measurement of perfectionism, importantly, studies examining the relationship between perfectionism have been entirely reliant upon retrospective accounts of suicide and self-report measures of suicidality. There are, however, a number of methodological issues with reliance upon self-report measures (Bernard, Killworth, Kronenfeld, & Sailer, 1984; Fazio & Olson, 2003; Stone, Bachrach, Jobe, Kurtzman, & Cain, 1999), including that individuals (a) may not be aware of the beliefs that they hold, (b) may choose to report inaccurately and (c) may, consciously or unconsciously, wish to present themselves in a certain way. Reliance upon self-report for measurement of suicidality is particularly problematic, as there are reasons why individuals often fail to accurately self-report their suicidality. One of these reasons is that individuals often fail to accurately forecast their future suicidal behaviours (Janis & Nock, 2008). For instance, in one retrospective study, 78% of hospital patients who committed suicide denied having suicidal thoughts 1 week before committing suicide (Busch, Fawcett, & Jacobs, 2003). This failure to disclose suicidality may be due, in part, to the limits of introspection (Nisbett & Wilson, 1977; Nosek, Greenwald, & Banaji, 2007). Indeed, Appleby and colleagues (1999) reported that among individuals that committed suicide within 12 months of being in contact with mental health services, 84% were described as being at either no or low

risk of committing suicide. Thus, individuals may be unaware or uncomfortable with admitting to themselves that they are suicidal. Furthermore, research suggests that even those who recognize that they are suicidal may be uncomfortable disclosing negative information about themselves to others, especially when that information is related to suicidality (Beck & Steer, 1989; Glenn & Nock, 2014). This tendency to actively conceal distressing personal information from others has been identified as self-concealment (Larson & Chastain, 1990). Research has shown that self-concealment is associated with suicidal behaviours amongst youth (Friedlander, Nazem, Fiske, Nadorff, & Smith, 2012) and a hesitancy to seek psychological help when in need (Cepeda-Benito & Short, 1998). Notably, self-concealment is a common issue amongst perfectionists (Kawamura & Frost, 2004) and the desire to self-conceal often prevents perfectionists from seeking support (Hewitt & Flett, 2013; Williams & Cropley, 2014). Thus, the issues with reliance upon measuring suicidality solely through self-report are therefore compounded amongst perfectionists, who are already at increased risk of becoming suicidal and may be especially hesitant to disclose or self-report on issues surrounding suicidality.

Toward a Greater Sensitivity for Identifying and Assessing Suicide Amongst Perfectionistic Individuals: Implicit Assessment of Suicidality

In an effort to identify individuals who are especially hesitant to disclose negative information about themselves, Hewitt and colleagues (2003) described perfectionistic self-presentation (PSP) as a trait of certain individuals that present a false image of flawlessness and invulnerability to others. They identified three dimensions of PSP, including perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection. Perfectionistic self-promotion refers to an individual's tendency to actively present themselves to others in a perfect manner. Such individuals are often eager to share their accomplishments and the high standards

that they are currently living up to with others. Nondisplay of imperfection is the tendency of individuals to refrain from acting in ways that might be interpreted as a reflection of imperfection. Such individuals may be hesitant to perform for others in circumstances where they may be judged as not performing perfectly. Lastly, nondisclosure of imperfection is the tendency to refrain from sharing information with individuals that might be interpreted as a reflection of their failure to be perfect. Flett and colleagues (2014) propose that it is this last form of PSP that likely prevents individuals struggling with suicidality from opening up to others around them about their issues. Moreover, such individuals are likely to be hesitant to self-report their suicidality to mental health practitioners and others, even when feeling distressed and suicidal. A recent study by DeRosa, Flett, and Hewitt (2014) reported that high school students high in PSP, particularly those high in nondisclosure of imperfection, were high in self-concealment and had negative attitudes toward seeking help. These findings are in line with Flett and Hewitt's (2013) theory that perfectionistic individuals experiencing distress "fly under the radar" and fail to receive psychological help when in need. Thus, research to date suggests that individuals high PSP may be especially unlikely to self-report suicidal ideation. However, research has not yet tested empirically whether hesitancy to self-report on suicidality amongst perfectionists is moderated by (i.e., dependent upon) their levels of PSP.

In line with this possibility, a recent review of perfectionism and suicidality suggests that it is this tendency to hide behind a mask of perfection that often prevents individuals from receiving help when they are in need (Flett & Hewitt, 2013; Flett et al., 2014). Indeed, multiple case studies of perfectionistic individuals who have committed suicide report that they did so without warning and without being identified as at risk (Apter et al., 1993; Kiamanesh et al., 2015; Törnblom, Werbart, & Rydelius, 2013). One study conducted in depth interviews with

friends and family of six individuals that had committed suicide. Qualitative analysis of the interviews indicated that these individuals were highly perfectionistic and that they struggled due to their rigid pursuit of success and ineffective means of dealing with adversity. Moreover, it was these perfectionists' fear of failure and their desire to prevent others from seeing their imperfection that ultimately contributed toward their committing suicide (Kiamanesh et al., 2015). A series of psychological autopsies also found that of 33 young males who committed suicide, 71.4% displayed perfectionistic traits, including having high demands and expectations (Törnblom et al., 2013). The autopsies suggested that many of these individuals were not identified as being vulnerable to committing suicide because they were hiding behind "masks" that hid their distress. These studies found that perfectionistic individuals often experience immense shame due to their inability to live up to excessively high standards, and that they tend to conceal this information from others. Parents and friends of such individuals are often completely unaware of their struggles and report that these individuals hide behind a mask of perfection and fail to share their issues with those around them before it is too late. In these and related cases, difficulty identifying at risk individuals prevents family, friends and health care providers from providing support and assistance that is essential to suicide prevention. Given the high rate of suicidality amongst perfectionists and the importance of early intervention, it is essential that more effective means of identifying suicidality be identified and implemented.

To address concerns with regards to self-reporting of suicidality, various means of behaviourally assessing suicidality that are not susceptible to self-report biases have been developed. One particular method that has received attention is the use of the implicit association test (IAT), which is a brief computerized task that uses reaction time to determine individuals' automatic association with certain concepts. On IAT tasks, individuals are presented with two

target concepts (i.e., “life,” “death,” “me” and “not me”) and an attribute (e.g., “live,” “dead,” “I” and “they”) that is related to one of the target concepts. Faster ability to categorize a concept with an attribute indicates that it is easier for the individual to do so, and therefore that the concept and attribute are more strongly associated in their minds (Greenwald, Nosek, & Banaji, 2003). The IAT requires that individuals rapidly respond to the targets presented, and is, therefore, less susceptible to self-report biases. IAT tasks for examining mental health difficulties, including depression, anxiety, and eating disorders, have been shown to be predictive of mental health difficulties beyond self-report measures (Wernitz, Steinman, Glenn, Nock, & Teachman, 2016). As well, the IAT has also been found to be predictive of associated behaviours (e.g., alcohol use; Houben & Wiers, 2008) that self-report measures sometimes cannot predict (For a review, see Roefs et al., 2011). One such IAT that has been developed is the death/suicide IAT (d/s-IAT) (Nock et al., 2010). The d/s-IAT has participants classify stimuli related to death (die, dead, deceased, lifeless and suicide) and life (alive, survive, live, thrive and breathing) as either being related to their selves (I, myself, my, mine and self) or others (they, them, their, theirs and other). By comparing an individual’s response time to death and life words, this task provides a measurement of an individual’s automatic association between themselves and suicide.

Research has shown that scores on the d/s-IAT are highly predictive of suicidality in both clinical and nonclinical populations, and has suggested that it ought to be used as a tool for assessing suicidality (Nock et al., 2010). Among a nonclinical sample of university students, the d/s-IAT predicted 5 of 6 indicators of suicidal risk (depression, suicide ideation frequency and intensity, nonsuicidal self-harm thoughts intensity, and nonsuicidal self-harm attempts), even after controlling for past suicidal behaviours (Harrison, Stritzke, Fay, Ellison, & Hudaib, 2014).

Furthermore, in a study of individuals seeking emergency psychiatric care, scores on the d/s-IAT distinguished between individuals with a recent history of suicidal behaviours and those who were distressed but nonsuicidal (Nock et al., 2010; Randall, Rowe, Dong, Nock, & Colman, 2013). Moreover, performance on the d/s-IAT has been shown to prospectively predict future suicidal behaviour and outperforms alternative predictors of suicidal behaviour, including self-forecasts and self-report measures, clinical judgment, risk factors, and diagnoses (Ellis, Rufino & Green, 2016; Nock et al., 2010; Randall et al., 2013). Some studies have suggested that the d/s-IAT is an even greater predictor of suicidality than is past suicidal behaviour (Nock et al., 2010), while other studies have suggested otherwise (Harrison et al., 2014; Randall et al., 2013). Nonetheless, the d/s-IAT accounts for additional variance of suicidal behaviours beyond that accounted for by self-report and clinical risk factors, suggesting that the d/s-IAT has incremental validity above that of alternative methods of assessing suicidality.

To date, research has only explored the relationship between perfectionism and self-reported suicidality and has not explored the relationship between perfectionism and behavioural measures of suicidality, such as the d/s-IAT. This is an especially important gap within the literature, because suicide risk is often assessed through self-report, a means of assessment that may be especially problematic for detecting suicidality amongst perfectionists, and which may explain the difficulty in detecting suicidality amongst perfectionists before suicide occurs. Moreover, research has not yet explored whether implicit measurement of suicidality, in comparison with explicit measurement of suicidality, is especially important when assessing suicidality amongst those who are hesitant to disclose negative information about themselves and tend to present themselves as perfect to others. Given the importance of early identification of suicidality, coupled with the hesitancy to disclose self-relevant negative information amongst

perfectionistic individuals, the d/s-IAT is likely to be an essential assessment tool for identifying suicidal perfectionists.

Toward an Improved Understanding of the Relationship Between Perfectionism and Suicidality: Examination of Key Mediators

Although research to date has established a strong association between perfectionism and suicidality, it has only begun to identify the pathways that account for the link between perfectionism to suicidality. Mediators are variables that account for the causal connection between two variables and thereby explain *why* two variables are associated with one another (Kazdin, 2007; Nock 2007). Therefore, identifying mediators that account for the relationship between perfectionism and suicidality is important, as it may help to explain the reasons why perfectionism is associated with suicidality. Furthermore, identifying pathways that account for the relationship between perfectionism and suicidality may help to identify targets for intervention and prevention efforts. Indeed, previously or newly developed interventions might specifically target these identified pathways in order to decrease rates of suicide amongst perfectionistic individuals.

The escape theory of suicide (Baumeister, 1990) suggests that suicide functions as a means of escaping psychological distress due to not meeting their expectations and those of others (Baumeister, 1990). Past research provides support for this model, suggesting that failing to live up to one's own standards, which frequently occurs amongst individuals high in SOP and SPP, is emotionally distressing (Higgins, 1987). Similarly, research has found that that discrepancy between one's expectations and failure to meet those expectations, common among individuals high in SOP, is associated with heightened levels of suicidal ideation (Cornette, Strauman, Abramson, & Busch, 2009). Research has also found higher self-expectations among

suicidal patients than among nonsuicidal patients (Ellis & Ratliff, 1986). Finally, within nonclinical samples, studies have shown that, after experiencing or reflecting on failure to meet one's standards, individuals express a reduced desire to live (Hayes, Ward, & McGregor, 2016) and are more likely to have suicide on their minds (Chatard & Selimbegović, 2011; Tang, Wu, & Miao, 2013).

Given that perfectionists tend to chronically and critically self-evaluate themselves, their performance, and their achievements, they are more likely to frequently experience distress after failing to live up to their high expectations and those of others (Hunter & O'Connor, 2003). The escape theory of suicide, therefore, suggests that perfectionists may be especially susceptible to suicidality because of their enhanced difficulties coping with failure to meet expectations and the psychological distress it causes. Indeed, research has suggested that maladaptive perfectionists have difficulties coping with distress and stressful life experiences (Hewitt & Flett, 2002). In fact, multiple lines of research have shown that perfectionists engage in maladaptive coping strategies and that such maladaptive coping mediates the relationship between perfectionism and both psychological distress and depression (Dunkley & Blankstein, 2000; Dunkley et al., 2000; Dunkley, Sanislow, Grilo, & McGlashan, 2006; Dunkley, Solomon-Krakus, & Moroz, 2016; Dunkley, Zuroff, & Blankstein, 2003; Dunn, Whelton, & Sharpe, 2006; Noble, Ashby, & Gnilka, 2014; Park, Heppner, & Lee, 2010; Santanello & Gardner, 2007; Zhang & Cai, 2012). Thus, research to date suggests that perfectionists experience heightened levels of distress. However, research has not yet directly tested whether the heightened levels of distress associated with perfectionism accounts for the association between perfectionism and suicidality. Furthermore, psychological distress is a broad and nonspecific construct, given that there are various forms of psychological distress. Research is, therefore, necessary to identify which specific components of

psychological distress contribute to the heightened levels of suicidality amongst perfectionists. In particular, research is necessary in order to explore whether psychological distress associated with shame, difficulty regulating emotion, and low levels of self-compassion, mediate the relationship between perfectionism and suicidality. Each of these possible mediators is discussed below.

Shame. There are numerous emotions associated with psychological distress. One particularly distressing emotion, which is conceptually similar to the aversive state of self-awareness described by the escape theory of suicide (Baumeister, 1990) and therefore, may account for the relationship between maladaptive perfectionism and suicidality, is shame. Shame is described as a self-conscious negative emotion wherein the global self is devalued as a result of perceiving that one has failed to meet the standards and expectations of one's self and others (Lewis, 1992; Tracy & Robins, 2004). Early theorists on perfectionism suggested that, amongst perfectionists, failure to achieve perfectionistic standards may result in overwhelming experiences of shame (Hamachek, 1978; Kohut, 1972; Sorotzkin, 1985). Empirical evidence has supported the link between perfectionism and shame, finding that social perfectionism (i.e., elevations in both SPP and PSP; Hewitt et al., 2006) and maladaptive perfectionism are associated with greater proneness to experiencing shame and higher levels of shame (Chen, Hewitt, & Flett, 2015; Fedewa, Burns, & Gomez, 2005; Stoeber, Harris, & Moon, 2007), especially after experiencing failure (Stoeber, Kempe, & Keogh, 2008).

Importantly, shame has also been identified as a factor associated with suicidality and suicide itself (Dutra, Callahan, Forman, Mendelsohn, & Herman, 2008; Hastings, Northman, & Tangney, 2002; Lester, 1997; Van Orden et al., 2010). For instance, within a group of Australian men who experienced the breakdown of a relationship, higher levels of state shame were

associated with increased suicidality (Kolves, Ide, & De Leo, 2011). Additionally, within a military clinical sample, shame was found to be associated with suicidal ideation (Bryan, Ray-Sannerud, Morrow, & Etienne, 2013). Shame proneness amongst fifth graders has also been found to prospectively predict future suicide attempts during young adulthood (Tangney & Dearing, 2003). Furthermore, past research has found that shame partially mediates the relationship between maladaptive perfectionism and depression (Ashby, Rice, & Martin, 2006), suggesting that shame may contribute to problematic outcomes associated with perfectionism.

Moreover, research to date on the relationship between shame and both perfectionism and suicidality has focused primarily on internalized shame (i.e., global negative evaluation of the self), but has not yet fully explored the role of externalized shame (i.e., perceived global negative evaluation by others; Gilbert, 2007; Goss, Gilbert, & Allan, 1994). This distinction is especially important, given that certain dimensions of perfectionism are associated with distress due to failing to meet one's own high expectations (e.g., SOP), while other dimensions of perfectionism are associated with distress due to failing to meet the high expectations of others (SPP). Support for the importance of externalized shame can be drawn from the perfectionistic social disconnection model (PDSM), which suggests that the social dimensions of perfectionism (SPP and PSP) contribute toward individuals experiencing shame and becoming socially withdrawn and disconnected from others (Chen et al., 2015; Hewitt et al., 2006). According to Hewitt and colleagues (2006), social perfectionists in turn experience high levels of distress, which leads them toward suicidality. Early research has supported this model, finding that, within a psychiatric adolescent population, social hopelessness (i.e., feeling as if one is unable to establish strong social connections; Heisel, Flett, & Hewitt, 2003) mediates the relationship between social perfectionism and multiple indices of suicidality, including risk and self-reported

likelihood of committing suicide in the future (Roxborough et al., 2012). Also in support of the PDSM, one study found that the relationship between maladaptive perfectionism and suicide ideation was mediated by perceived burdensomeness, amongst university students (Rasmussen, Slush, Wingate, Davidson, & Grant, 2012). Finally, a recent review suggested that shame may account for the relationship between perfectionism and suicidality, and that targeting shame might be an effective means of preventing suicide amongst perfectionistic individuals (Flett et al., 2014). However, research to date has not yet explored whether shame, internalized or externalized, are pathways through which perfectionism leads toward suicidality. Future research should, therefore, explore whether both externalized and internalized shame function as mediators through which perfectionism leads to suicidality.

Coping with Distress: Emotion Regulation. One important means of coping with distress in general, and shame in particular, is emotion regulation (Losoya, Eisenberg, & Fabes, 1998), which is a goal directed process that influences the initiation, inhibition, and modulation of one's emotions (Gross, 1999; Gross & Thompson, 2007). Research suggests that maladaptive perfectionism is associated with difficulties regulating emotional responses to distress (Richardson, Rice, & Devine, 2014). For instance, one study found a relationship between perfectionism and deficits in cognitive emotion regulation amongst university students (Rudolph, Flett, & Hewitt, 2007). Specifically, the study found a positive correlation between SPP and maladaptive cognitive emotion regulation strategies, such as self-blame, catastrophizing and rumination, and a negative correlation between SPP and adaptive cognitive emotion regulation strategies, such as putting things into perspective and positive reappraisal. Finally, another study found that maladaptive perfectionism was positively associated with emotion suppression, a maladaptive emotion regulation strategy, and negatively associated with emotion reappraisal, an

adaptive emotion regulation strategy (Bergman, Nyland, & Burns, 2007). Thus, research to date suggests that there is a relationship between maladaptive perfectionism and deficits in emotion regulation.

As well, research suggests that deficits in emotion regulation are associated with suicidality. Indeed, psychological disorders characterized by maladaptive emotion regulation processes, such as depression (Silk, Steinberg, & Morris, 2003) and borderline personality disorder (Glenn, 2009), are associated with high rates of suicide. Amongst children, it has been found that having fewer adaptive responses and more maladaptive responses to negative emotion is associated with increased risk of suicidal ideation, plans, and attempts (Tamás et al., 2007). Additionally, within an adolescent inpatient population, adolescents who had attempted suicide in the past reported lower levels of emotion regulation than did adolescents with suicide ideation who had not attempted suicide in the past (Zlotnick, Donaldson, Spirito, & Pearlstein, 1997). As well, amongst high school students in an underserved population, difficulties with emotion regulation have been found to be associated with increased risk of having attempted suicide in the past year, even after controlling for depression severity and demographic factors (Pisani et al., 2013). Similarly, adolescents with multiple suicide attempts have been found to have lower levels of emotion regulation than adolescents with a single suicide attempt (Esposito, Spirito, Boergers, & Donaldson, 2003). In a study by Ciarrochi, Deane, and Anderson (2002), it was found that difficulties with managing self relevant emotions was associated with higher levels of suicidal ideation, amongst university students. Similarly, within a college sample, having fewer strategies for regulating emotion was found to be predictive of suicidal ideation and number of suicide attempts (Rajappa, Gallagher, & Miranda, 2012). Flett and Hewitt (2014) recently suggested the importance of emotion regulation based interventions as an important means of

targeting perfectionism. However, to date, research has not yet explored whether deficits in emotion regulation account for the elevated levels of suicidality associated with perfectionism. It is therefore important that research explores whether difficulties with emotion regulation is a pathway that accounts for increased levels of suicidality associated with perfectionism. Furthermore, research should begin to explore which emotions, in particular (e.g., shame), perfectionists struggle to regulate and how these emotions contribute toward increased levels of suicidality.

Self-Compassion. There are numerous ways of regulating emotions. One form of emotion regulation that is associated with maladaptive perfectionism, shame, and suicidality, is self-compassion (Barnard & Curry, 2011; Barnard & Curry, 2012; Gilbert & Irons, 2005; Gilbert & Procter, 2006; Neff, 2003; Shahar et al., 2015; Woods & Proeve, 2014). Self-compassion is conceptualized as an adaptive emotion regulation strategy (Diedrich, Grant, Hofmann, Hiller, & Berking, 2014; MacBeth & Gumley, 2012) that involves being kind toward the self, mindful awareness and recognizing that failure is part of the shared human experience (Neff, 2003). Importantly, research suggests that self-compassion is an effective emotion regulation strategy for coping with the emotion of shame in particular. For instance, self-compassion has been found to be negatively associated with internalized shame (Barnard & Curry, 2012). Additionally, Johnson and O'Brien (2013) found that individuals showed less state shame immediately after completing a self-compassion writing exercise, as well as less shame proneness two weeks later. Furthermore, interventions that promote self-compassion have been shown to reduce shame (Judge, Cleghorn, McEwan & Gilbert, 2012). Thus, research to date suggests that self-compassion may be an especially important emotion regulation strategy for coping with shame.

Given the self-critical and nonaccepting coping style that is characteristic of maladaptive perfectionism, deficits in regulating emotion through self-compassion may account for the maladaptive effects of perfectionism. In support of the negative influence of low levels of self-compassion amongst perfectionists, it has been suggested that the key difference between adaptive and maladaptive forms of perfectionism is that maladaptive perfectionists are unable to accept their failure to achieve high standards, while adaptive perfectionists are more accepting and less self-critical of themselves (Lundh, 2004). Indeed, among perfectionists, this difficulty with accepting one's self has been shown to contribute to the experience of psychological distress (Lundh, 2004; Lundh, Saboonchi, & Wångby, 2008). Empirical research has begun to explore the association between perfectionism and self-compassion. For instance, Neff (2003) found a negative relationship between maladaptive perfectionism and self-compassion. Furthermore, mindfulness (i.e., a nonjudgmental state in which individuals observe and accept their thoughts and emotions; Hayes, Strosahl, & Wilson, 2011), a key component of self-compassion as defined by Neff (2003), is negatively associated with SPP (Short & Mazmanian, 2013) and mediates the relationship between maladaptive perfectionism and clinical depression (Argus & Thompson, 2008). Thus, research to date suggests that there is a connection between maladaptive perfectionism and self-compassion. However, additional research is necessary to determine whether self-compassion is a pathway through which maladaptive perfectionism results in negative outcomes, such as suicidality.

One indication that self-compassion may account for the relationship between maladaptive perfectionism and suicidality is based on research reporting that lower self-compassion is associated with higher levels of suicidality. First, amongst college students, self-compassion has been found to be associated with both suicidal ideation (Basharpour, Daneshvar,

& Noori, 2016) and suicidal behaviours (Chang et al., 2017). Second, within a sample of youth with a history of childhood maltreatment, compared with individuals with high levels of self-compassion, individuals with lower levels of self-compassion were more likely to have attempted suicide in the past (Tanaka, Wekerle, Schmuck, & Paglia-Boak, 2011). Similarly, amongst youth exposed to a potentially traumatic event, self-compassion mediated the severity of depression severity and suicidality after the occurrence of the potentially traumatic event (Zeller, Yuval, Nitzan-Assayag, & Bernstein, 2014). Moreover, in comparison with healthy controls, females with a history of self-harm report lower levels of self-compassion (Gregory, Glazer, & Berenson, 2017). Thus, it appears that there is a link between deficits in self-compassion and heightened levels of suicidality.

Beyond self-compassion being associated with both maladaptive perfectionism and suicidality, research to date also suggests that deficits in self-compassion may account for the link between maladaptive perfectionism and suicidality. First, studies have found that unconditional self-acceptance, a related construct that entails noncontingent acceptance of one's self, mediates the relationship between SPP and depression (Flett, Besser, Davis, & Hewitt, 2003; Scott, 2007). Second, research has similarly found that self-criticism accounts for the relationship between perfectionism and depression severity, as well as anxiety and eating disorder symptoms (Dunkley, Blankstein, Masheb, & Grilo, 2006). Third, recent studies have found that self-criticism partially mediates the relationship between maladaptive perfectionism and psychological distress (James, Verplanken, & Rimes, 2015). Finally, among college students, self-compassion was found to partially mediate the relationship between perfectionism and depression severity (Mehr & Adams, 2016). Therefore, research to date suggests that deficits

in self-compassion may contribute to the high rates of suicidality amongst perfectionistic individuals.

Altogether, these findings suggest that self-compassion may be a pathway through which perfectionism leads to psychological distress in general and suicidality in particular. Indeed, recent reviews on promoting resilience amongst adolescents (Flett & Hewitt, 2014), as well as on targeting suicidality amongst perfectionistic individuals (Flett et al., 2014), have suggested the importance of promoting self-compassion and self-acceptance amongst perfectionists. Importantly, these reviews have not included direct empirical evidence to support self-compassion as a mediator of the relationship between perfectionism and suicidality. Thus, though research has found a significant relationship between self-compassion and both perfectionism and suicidality, additional research is necessary to determine whether self-compassion functions as a pathway through which perfectionism leads to suicidality.

Study Objectives and Hypotheses

In sum, research to date has identified suicide as an important public health concern that is in need of attention. Identifying individuals at risk of committing suicide requires that suicide prevention efforts focus on a spectrum of suicidal behaviours (i.e., suicide attempts, suicide plans, and suicidal ideation) so that interventions are able to assist at-risk individuals early on. One important risk factor for suicide that has been identified is perfectionism. Perfectionism is characterized by the presence of overly rigid and high expectations and standards (Frost et al., 1990). Different models of perfectionism have been presented including those that incorporate interpersonal and intrapersonal dimensions of perfectionism (Frost et al., 1990; Hewitt & Flett, 1991) and research has identified some of these dimensions of perfectionism to be adaptive, while other dimensions of perfectionism have been identified as being maladaptive (Bieling et

al., 2004). While research has not found a relationship between adaptive perfectionism and suicidality, certain components of maladaptive perfectionism (e.g., SPP, CM, DA) have been shown to be associated with suicidality. However, this research has not yet explored whether composite scores of maladaptive perfectionism are predictive of suicidality. Moreover, past research has often found mixed results with regard to the uniqueness of the relationship between components of maladaptive perfectionism and suicidality. Additional research that controls for potentially overlapping variables, such as depression severity and hopelessness, is, therefore, necessary to better understand the relationship between perfectionism and suicidality.

Furthermore, because perfectionistic individuals are hesitant to conceal their need for help, it has been suggested that the problem surrounding perfectionism and suicide is far greater than realized, and that many suicidal perfectionists may present themselves in a perfect manner and conceal their need for assistance (Flett et al., 2014). One method of detecting suicidality that does not rely upon self-report is the d/s-IAT, a behavioural measure of suicidality that is highly predictive of future suicidal behaviour (Nock et al., 2010). This measure may be a particularly effective means of detecting suicidality amongst perfectionists, especially among those perfectionists who are hesitant to disclose negative information about themselves.

Finally, though the relationship between perfectionism and suicidality is well established, research has only identified a small number of pathways that explain this relationship. Based on theoretical and empirical research on both perfectionism and suicidality, this study explored potential mediating variables, including internalized shame, externalized shame, difficulties with emotion regulation and self-compassion, that may contribute to the relationship between perfectionism and suicidality.

The proposed research aimed to build upon the perfectionism-suicidality literature and address some of the limitations to date. Specifically, the proposed study aimed to 1) delineate the core dimensions of perfectionism associated with suicidality, 2) explore differences between implicit and explicit suicidality, along with their relationship with dimensions of perfectionism, and 3) examine potential mediators of the perfectionism-suicidality relationship, while controlling for depression severity and hopelessness.

1. It was hypothesized that (a) *maladaptive perfectionism* (SPP, CM, DA, PE and PC) will be positively correlated with implicit and explicit suicidality. Furthermore, it was hypothesized that b) *adaptive perfectionism* (SOP, OOP, PS and O) will not be significantly correlated with implicit suicidality or explicit suicidality. Analyses controlled for depression severity and hopelessness.
2. It was hypothesized that c) the effect of *maladaptive perfectionism* on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality. Furthermore, it was hypothesized d) that this effect will be qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism, such that the effect of maladaptive perfectionism on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality amongst individuals that who are high in perfectionistic self-presentation. Analyses controlled for depression severity and hopelessness.
3. Finally, this study conducted exploratory tests of indirect effects of multiple related variables, including internalized shame, externalized shame, difficulties with emotion regulation and self-compassion, and their influence on the relationship between maladaptive perfectionism and suicidality (implicit and explicit suicidality).

Chapter II: Method

Participants

This study included a sample size of 130 undergraduate participants. The sample size was determined by calculating the minimum sample size required for use of structural equation modeling (SEM), one of the primary data analytic methods in the current investigation. There is no clear consensus regarding sample size requirements for SEM, however, some suggest that a minimum sample size of 100 is necessary for model convergence (Anderson and Gerbing, 1984), while others suggest that sample sizes should be determined based on the number of parameters included in the model. Specifically, Bentler and Chou (1987) recommend that there be at least a 5:1 ratio of sample size to free parameters in the model. This model included 24 parameters, therefore a sample size of 130 was decided upon.

The participants consisted of 108 female and 22 male undergraduate students currently enrolled in the Introductory Psychology courses (PSY102 and PSY202) at Ryerson University. To be eligible to participate in this study, participants were: (1) between 17-60 years of age and (2) able to speak and read English. The mean age of the participants was 21.04 years ($SD=6.30$, range: 17-57). For participant race/ethnicity see Table 1.

Table 1

<i>Racial/Ethnic Identification</i>		
Ethnicity	Frequency	%
White / Caucasian / European Origin	48	36.9
Black-Canadian / Black / Caribbean Origin	7	5.4
Asian or Asian Canadian	56	43.1
Middle Eastern	11	8.5

Hispanic/ Latino	2	1.5
Biracial / Multiracial	6	4.6

Procedure

Participants were recruited through Ryerson's online subject pool (SONA) and compensated with 1 course credit for their participation. Interested participants were given the option of signing up for the study and were then invited to the Borderline Personality Disorder and Emotion Processing Lab (BEPLab) located at 105 Bond Street on the Ryerson University campus. After consenting to participate in the study, participants were asked to complete the death/suicide implicit association test (Nock et al., 2010) on a lab computer (see Measures section for further detail). Afterward, participants were asked to electronically complete a battery of questionnaires, on the same computer, which included items related to demographics, perfectionism, suicidality, shame, difficulties with emotion regulation, and self-compassion (see Measures section below).

For participant safety monitoring, at the beginning and end of the experiment, participants were also administered the University of Washington Risk Assessment Protocol (UWRAP; Reynolds, Lindenboim, Comtois, Murray, & Linehan, 2006), an interview that measures urges to engage in suicide, self-harm, and other problematic behaviors. The UWRAP consists of three sections, (a) the *Face Sheet*, which assesses the participant's stress and urges before the assessment (b) the *Mood Improvement Protocol*, during which strategies for coping with negative emotions, during and after the assessment, are identified, and (c) the *Debriefing Form*, which reassess the participant's stress and urges after the assessment, and provides recommendations for decreasing the participant's distress.

Measures

Demographics Form – Participants were assessed on various demographic items such as age, sex, gender, year of study and status (full/part-time) in university, first language, ethnicity and relationship status.

Measures of Perfectionism

Hewitt and Flett Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991) - The HMPS is a 45-item self-report trait measure of perfectionism assessed across 3 dimensions, including (a) self-oriented perfectionism (SOP; e.g., “*One of my goals is to be perfect in everything I do*”), (b) socially prescribed perfectionism (SPP; e.g., “*I find it difficult to meet others’ expectations of me*”), and (c) other-oriented perfectionism (OOP; e.g., “*I cannot stand to see people close to me make mistakes*”). Respondents report the extent to which they agree with each statement on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). The measure has shown adequate validity, with SOP being significantly correlated with measures of high self-standards, SPP being significantly correlated with measures of parental expectations and parental criticism, and OOP being correlated with narcissism (Hewitt & Flett, 1991). Furthermore, the scales of the HMPS have been shown to have good to adequate internal consistency (e.g., SOP $\alpha = .88$; SPP $\alpha = .81$; OOP $\alpha = .74$) within a college and clinical samples (Hewitt & Flett, 1991; Hewitt et al., 1991) and have been found to have adequate test-retest reliability (SOP $r = .69$; SPP $r = .60$; OOP $r = .66$) over a 3-month period. Within the current sample, the scales’ internal consistencies ranged from fair, (SOP $\alpha = .70$; SPP $\alpha = .75$) to poor (OOP $\alpha = .50$).

Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990) – The FMPS is a 35-item self-report trait measure of perfectionism with six subscales, including (a) concern over mistakes (e.g., I hate being less than the best at things), (b) parental expectations (e.g., “My

parents set very high standards for me”), (c) parental criticism (e.g., “I never felt like I could meet my parents' expectations”), (d) doubts about actions (e.g., “It takes me a long time to do something “right”), (e) personal standards (e.g., “I have extremely high goals”), and (f) organization (e.g., “I am an organized person”). Respondents report the extent to which they agree with each statement on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Total scores, which include all subscales other than the organization subscale, range from 35 to 175, with higher scores indicating higher levels of perfectionism. There is strong support for the validity, with each of the subscales, other than the organization subscale, correlating with general measures of perfectionism (Frost et al., 1993; Frost et al., 1990; Hewitt, & Flett, 1991). Furthermore, research has found strong support for the internal consistency of the FMPS for both the total scale ($\alpha = .90$) and the six subscales ($\alpha = .77-.93$) (Frost et al., 1990). Within the current sample, the total scale showed excellent internal consistency, ($\alpha = .94$) and the internal consistency of the six subscales ranged from excellent (O $\alpha = .92$; CM $\alpha = .91$) to good (PE $\alpha = .87$; PC $\alpha = .84$, PS $\alpha = .80$; DA $\alpha = .81$).

Perfectionistic Self-Presentation (PSP; Hewitt et al., 2003) – The PSP is a 27-item self-report trait measure composed of 27 items and consisting of 3 subscales, including (a) perfectionistic self-promotion (10-items; e.g., “I try always to present a picture of perfection”), (b) nondisplay of imperfection (10-items; e.g., “It would be awful if I made a fool of myself in front of others”), and (c) nondisclosure of imperfection (7-items; e.g., “I try to keep my faults to myself”). Participants respond to the statements on a scale ranging from 1 (disagree strongly) to 7 (agree strongly) and higher scores indicate higher levels of perfectionistic self-presentation. Studies have found support for the multidimensionality of this construct, with factor analyses indicating that the scales yield correlated but independent factors. Furthermore, strong evidence

has been found for each of the scales' internal consistency (perfectionistic self-promotion $\alpha = .84-.89$, nondisplay of imperfection $\alpha = .83-.91$ and nondisclosure of imperfection $\alpha = .76-.88$). Finally, research on the validity of the perfectionistic self-presentation has shown that it is associated with, but distinct from similar constructs, including trait dimensions of perfectionism, social concerns, and self-presentational tactics (Hewitt et al., 2003). Within the current sample, the total scale ($\alpha = .95$) and two of the three subscales (perfectionistic self-promotion $\alpha = .90$; nondisplay of imperfection $\alpha = .92$) had excellent internal consistency, while one scale showed good internal consistency (nondisclosure of imperfection $\alpha = .81$).

Measures of Suicidality

Death/suicide Implicit Association Test (d/s-IAT; Nock et al., 2010) - Implicit associations of the self with death and suicide were measured using the d/s-IAT (Nock et al., 2010), which was administered and scored in line with past research using the IAT and the d/s-IAT (Greenwald et al., 2003; Nock et al., 2010). The d/s-IAT is a behavioural computer-based task that assesses an individual's automatic self-identification with death and suicide by measuring reaction times for classifying word stimuli representing life and death/suicide. The d/s-IAT was administered on the lab computer and a ViewSonic VA2702w monitor, using E-Prime software. Participants sorted word stimuli that represent the concepts of death ("dead," "suicide," "die," "lifeless" and "deceased") and life ("live," "survive," "thrive," "alive" and "breathing") or the attributes of me ("I," "myself," "mine," "my" and "self") and not me ("they," "them," "their," "theirs" and "other"). The dependent measure of the d/s-IAT is the difference score, or D-score, which is computed by comparing the response latencies recorded for blocks where "death" and "me" are paired together with blocks where "life" and "me" are paired together. Positive D-scores result from faster response time on the "death" and "me"

blocks than the “life” and “me” blocks, while negative D-scores result from faster response time on the “life” and “me” blocks than the “death” and “me” blocks. Thus, higher D-scores indicate that individuals have a stronger association between death and the self. Research has found strong support for the validity of the d/s-IAT, in that that individuals with a history of suicide attempts have higher D-scores and that the d/s-IAT incrementally predicts suicide ideation and suicide attempts, above and beyond other known predictive factors (Ellis et al., 2016; Nock et al., 2010).

Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991) – The BSS is a 19-item self-report measure of the severity of an individual’s current attitude, behaviours and plans to commit suicide. It assesses the individuals’ wish to die, frequency and attitude toward suicide ideation, active and passive consideration of committing suicide, specificity of suicidal plans and readiness to commit suicide over the past week. The BSS includes five screening items and an additional 14 items that are included when individuals report active or passive suicidal ideation. Total scores range from 0 to 38, with greater scores indicating higher levels of suicidal ideation. The BSS has been found to have strong psychometric properties, with high internal consistency for the computerized version ($\alpha = .96$), as well as moderate test-reliability ($r = .54$) over a 1-week period, within a clinical sample (Beck, Steer, & Ranieri, 1988). Furthermore, it is highly correlated (psychiatric inpatients $r = .90$; psychiatric outpatients $r = .94$) with a clinician administered suicide ideation measure (Beck et al., 1988) and moderately correlated with measures of related constructs, including depression ($r = .53$) and hopelessness ($r = .62$) (Beck et al., 1998). Within the current study, the scale showed good internal consistency ($\alpha = .80$).

Measures for Testing of Indirect Effects

Measures of Shame

The Internalized Shame Scale (ISS; Cook, 1988) – The ISS is a 30-item self-report trait measure composed of two subscales, (a) the internalized shame subscale and (b) the self-esteem scale. Only the internalized shame subscale, which consists of 24 items, was used within this study. Respondents report the frequency with which they have such experiences of shame (e.g., “*I feel like I am never quite good enough*”) with responses ranging from 0 (never) to 4 (almost always). The ISS has been reported to have strong internal consistency in both clinical ($\alpha = .96$) and nonclinical samples ($\alpha = .95$), as well as a strong test-retest reliability of .84 over a 7-week period (Cook, 1988), with additional studies reporting similarly strong reliability (del Rosario & White, 2006; Rybak & Brown, 1996). In support of the convergent and discriminant validity of the ISS, it has been found to be positively associated with pathology and negatively associated with measures of global self-esteem (Cook, 1994). Within the current study, the internalized shame subscale showed excellent internal consistency ($\alpha = .98$), while the self-esteem subscale showed good internal consistency ($\alpha = .86$).

The Other as Shamer Scale (OAS; Goss et al., 1994) – The OAS is an 18-item self-report measure adapted from the ISS (Cook, 1988) to measure trait externalized shame, defined as feeling that one’s global self is negatively evaluated by others. Respondents report the frequency with which they have such feelings or experiences (e.g., “*I think that other people look down on me*”), with responses ranging from 0 (never) to 4 (almost always). In support of the convergent and discriminant validity of the OAS, it has been shown to be more strongly correlated with trait shame measures than with state shame measures, and to have low to moderate correlations with other clinically significant issues, such as depression, anxiety and stress symptoms (Allan, Gilbert, & Goss, 1994). Furthermore, the OAS was found to have strong test-retest reliability over a 5-week period ($r = .86$), as well as strong internal consistency ($\alpha = .92$) and validity (Goss

et al., 1994). Additional studies have found the OAS to have similarly strong internal consistency within both general ($\alpha = .92$) and clinical populations ($\alpha = .94$) (Ferreira, Pinto-Gouveia, & Duarte, 2013). Within the current study, the scale showed good internal consistency ($\alpha = .86$).

Measure of Emotion Regulation

Difficulties in Emotional Regulation Scale (DERS; Gratz & Roemer, 2004) - The DERS is a 36-item self-report trait measure of six facets of emotion regulation, including (a) nonacceptance of negative emotions (e.g., “*When I’m upset, I feel like I am weak*”), (b) difficulty engaging in goal-directed behaviors when experiencing negative emotions (e.g., “*When I’m upset, I have difficulty concentrating*”), (c) difficulty controlling impulsive behaviors when experiencing negative emotions (e.g., “*I experience my emotions as overwhelming and out of control*”), (d) limited access to emotion regulation strategies (e.g., “*When I’m upset, my emotions feel overwhelming*”), (e) lack of emotional awareness (e.g., “*I pay attention to how I feel*”) and (f) lack of emotional clarity (e.g., “*I have difficulty making sense out of my feelings*”). Participants are asked to indicate how often each item applies to themselves, with responses ranging from 1 (almost never; 0-10%) to 5 (almost always; 91-100%). Higher scores on the DERS indicate greater difficulties regulating emotion. The DERS total score has been found to have strong test-retest reliability ($r = .88$) over a period of 4-8 weeks and excellent internal consistency ($\alpha = .93$), while the six subscales have been found to have good internal consistency ($\alpha = .80-.89$) (Gratz & Roemer, 2004). The DERS has also been found to have adequate construct validity, with certain subscales being correlated with clinically similar constructs, such as emotional avoidance and expressivity (Gratz & Roemer, 2004). Similarly, other subscales have shown predictive validity of behavioural outcomes, such as self-harm and frequency of intimate partner abuse (Gratz & Roemer, 2004). Within the current sample, the total scale showed

excellent internal consistency ($\alpha = .96$) and the internal consistency of the six subscales ranged from excellent (nonacceptance of emotional responses $\alpha = .93$) to good (difficulty engaging in goal directed behavior $\alpha = .87$; impulse control difficulties $\alpha = .87$; lack of emotional awareness $\alpha = .81$; limited access to emotion regulation strategies $\alpha = .92$; lack of emotional clarity $\alpha = .84$).

Measure of Self-Compassion

Self-Compassion Scale (SCS; Neff, 2003). The SCS is a 26-item self-report trait measure of self-compassion containing six subscales, including (a) self-kindness (e.g., “*I’m tolerant of my own flaws and inadequacies*”), (b) self-judgment (e.g., “*I’m disapproving and judgmental about my own flaws and inadequacies*”), (c) common humanity (e.g., “*I try to see my failings as part of the human condition*”), (d) isolation (e.g., “*When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world*”), (e) mindfulness (e.g., “*When I fail at something important to me I try to keep things in perspective*”), (f) over-identification (e.g., “*When I fail at something important to me I become consumed by feelings of inadequacy*”). Responses range from 1 (almost never) to 5 (almost always). The self-judgment, isolation, and over-identification subscales are reverse scored, and higher scores indicate higher levels of self-compassion. In support of the convergent validity of the SCS, the SCS has been found to be negatively correlated with a measure of depression and anxiety, and this significant association was present even after controlling for self-esteem. Furthermore, SCS has been found to be negatively correlated with related constructs, including suppression and rumination. In support of the discriminant validity of the SCS, Neff (2003) reported that the SCS was only moderately correlated with measures of self-esteem ($r = .25-.62$) and that while measures of self-esteem were significantly associated with narcissism, SCS was not. The measure has shown strong test-retest reliability (total score $r = .93$; subscales $r = .80-.88$) over a period of

approximately 3 weeks. Internal consistency for the total scale has been demonstrated as excellent ($\alpha = .92$), while the internal consistency of the subscales has ranged from adequate to good ($\alpha = .70-.84$). Within the current study, the total score showed excellent internal consistency ($\alpha = .93$) and the internal consistency of the six subscales ranged from good (self-kindness $\alpha = .85$; self-judgment $\alpha = .87$; common humanity $\alpha = .84$; isolation $\alpha = .82$) to adequate (mindfulness $\alpha = .77$; over-identification $\alpha = .78$).

Measures of Covariates

Measure of Hopelessness

Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974) – Given the established relationship between hopelessness and suicide (Brown et al., 2000), the Beck Hopelessness Scale (BHS) was included to control for hopelessness. The BHS is self-report state measure of hopelessness that consists of 20 statements regarding current pessimism toward the future (e.g., “All I can see ahead of me is unpleasantness rather than pleasantness”) with which respondents are asked to agree (true) or disagree (false). It consists of a theoretically based three factor structure, including (a) feeling about the future (affective), loss of motivation (motivation) and (c) future expectations (cognitive). In support of the validity of the BHS, it has been shown to be positively associated with depression in college and clinical populations (Alford et al., 1995) psychological distress, as well optimism and pessimism toward the future (Dember, Martin, Hummer, Howe, & Melton, 1989; Scheier & Carver, 1985). The BHS has also been shown to have strong internal consistency within clinical ($\alpha = .93$) (Beck et al., 1994) and nonclinical populations ($\alpha = .88$), as well as being predictive of future suicide (Beck et al., 1974; Beck, Steer, Kovacs, & Garrison, 1985). Within the current study, the scale showed good internal consistency ($\alpha = .86$).

Measure of Depression Severity

Depression Anxiety Stress Scales, 21-item version (DASS-21; Lovibond & Lovibond, 1995) - Given the established relationship between depression and suicide (Nock et al., 2009), the DASS-21 was included to control for depression severity. The DASS-21 is a 21-item self-report measure of (a) depression, (b) anxiety and (c) stress, adapted from the original 42-item Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995). For this study, only the depression subscale, which includes seven items (e.g., *"I couldn't seem to experience any positive feelings at all"*), was used. Participants are asked to rate the extent to which each statement applied to them over the past week on a scale ranging from 0 (never) to 4 (almost always). Scores for each scale are multiplied by two so that scores are comparable to the original 42-item DASS, and higher scores indicate greater depression severity. The depression scale of the DASS-21 has been shown to have strong internal consistency ($\alpha = .91$) (Sinclair et al., 2012) and validity in clinical (Antony, Bieling, Cox, Enns, & Swinson, 1998) and nonclinical samples (Henry & Crawford, 2005). In support of the concurrent validity of the depression scale of the DASS-21, research has found it to be most significantly associated with other established measures of depression. Within the current study, the depression subscale showed excellent internal consistency ($\alpha = .91$).

Data Processing and Analyses

Preliminary analyses of primary outcomes, as well statistical analyses for hypotheses #1 and #2 were conducted using IBM SPSS Statistics for Windows (v.21). Statistical analyses for hypothesis #3 were conducted using *Mplus* (Muthén & Muthén, 1998–2012). For hypothesis #3, SPP, DA, CM, PE and PC were included within the composite variable of maladaptive perfectionism.

Hypothesis 1a: Maladaptive perfectionism will be positively correlated with implicit and explicit suicidality. Hypothesis 1b: Adaptive perfectionism will not be significantly correlated with implicit suicidality or explicit suicidality.

In line with past research (Bieling et al., 2004), adaptive and maladaptive perfectionism was measured using composites of the HMPS and FMPS (after they were transformed into z -scores). Maladaptive perfectionism was calculated by summing the SPP scale from the HMPS with the CM, DA, PC and PE scales from the FMPS. Adaptive perfectionism was calculated by summing the SOP and OOP scales from the HMPS with the PS and O scales from the FMPS.

Spearman's rank-order correlation coefficients were calculated to examine the relationship between maladaptive perfectionism (SPP, CM, DA, PE, and PC) and adaptive perfection (SOP, OOP, PS and O) with both implicit suicidality (d/s-IAT) and explicit suicidality (SSI; total score). The following measures were included as *covariates*: DASS-21 depression subscale (depression severity) and BHS total score (hopelessness).

Hypothesis 2a: The effect of maladaptive perfectionism on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality. Hypothesis 2b: Furthermore, this effect will be qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism, such that the effect of maladaptive perfectionism on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality amongst individuals that are high in perfectionistic self-presentation.

A multivariate regression analysis was conducted to determine whether the effect of maladaptive perfection (*predictor variable*) on implicit suicidality (d/s-IAT; *outcome variable*) is greater than the effect of maladaptive perfectionism on explicit suicidality (SSI; total score; *outcome variable*). Perfectionistic self-presentation (PSP; total score; *moderator variable*) was

included in the multivariate regression analysis as a *moderator variable* to determine whether these effects are qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism. The following measures were included as *covariates*: DASS-21; depression subscale (depression severity) and BHS; total score (hopelessness).

Hypothesis 3: Tests of indirect effects of multiple related variables, including internalized shame, externalized shame, difficulties with emotion regulation and self-compassion, and their influence on the relationship between maladaptive perfectionism and suicidality (implicit and explicit suicidality).

Structural equation modeling (SEM) was used to assess the goodness of fit of the hypothesized model (i.e., that there is a unique relationship between maladaptive perfectionism and suicidality (implicit and explicit suicidality), via the mediating variables of: (a) internalized shame, (b) externalized shame, (c) difficulties with emotion regulation and d) self-compassion. SEM was used, rather than the Preacher and Hayes (2004) model of indirect effects using bootstrapping, because SEM is designed to test more complicated mediation models and allows the effect of multiple predictors to be assessed with a single test, thereby reducing the likelihood of family-wise error (MacKinnon, 2008; Ullman & Bentler, 2003). Chi-squared tests and other fit-indices (e.g., Root Mean Square Error of Approximation) were used to evaluate model fit. The SEM model included the composite variable of maladaptive perfectionism (SPP, CM, DA, PE, and PC) as a *predictor*, as well as (a) internalized shame (ISS; total score), (b) externalized shame (OAS; total score), (c) difficulties with emotion regulation (DERS; total score), and (d) self-compassion (SCS; total score) as *mediators*. Explicit suicidality (SSI; total score) was included as an *outcome* variable. At each step, the SEM analysis model parsimony was improved by removing nonsignificant variables and controlling for significant residual covariance.

Chapter III: Results

Missing Data

See Table 2 for a description of missing data, skewness, kurtosis and tests of normality.

Table 2

Missing Data, Skewness, Kurtosis and Tests of Normality for All Variables Included in the Study

Variable	Missing Data	Skewness	Kurtosis	Kolmogorov- Smirnov
Perfectionism (Independent Variables)				
Self-Oriented Perfectionism	0	-.16	-.29	.07
Socially Prescribed Perfectionism	0	.62	.15	.11*
Other-Oriented Perfectionism	0	-.03	1.49	.10*
Doubts About Actions	0	-.31	-.75	.16*
Concern Over Mistakes	0	.29	-.45	.08
Parental Criticism	0	.32	-.77	.10*
Parental Expectations	0	.21	-.64	.08*
Personal Standards	0	.26	-.43	.09*
Organization	0	-.62	-.11	.10*
Maladaptive Perfectionism	0	.24	-.52	.06
Adaptive Perfectionism	0	.27	-.17	.05
Suicidality (Dependent Variables)				
Explicit Suicidality	0	2.14	6.60	.37*
Implicit Suicidality	1	-.14	-.17	.04
Moderator Variable				

Perfectionistic Self-Presentation	0	-.09	-.29	.05
Mediator Variables				
Self-Compassion	0	-.14	.09	.04
Difficulties with Emotion Regulation	1	.17	-.08	.06
Internalized Shame	0	.50	-.41	.10*
Externalized Shame	0	.11	-.78	.05
Covariates				
Depression Severity	1	1.17	.93	.18*
Hopelessness	0	1.98	4.13	.22*

Note. * = $p < .05$

A Kolmogorov-Smirnov test was used to test for normality of all variables. Of the primary variables used in this investigation, which included implicit suicidality, explicit suicidality, maladaptive perfectionism, adaptive perfectionism, perfectionistic self-presentation, internalized shame, externalized shame, difficulties with emotion regulation, self-compassion, depression severity and hopelessness, the test indicated that explicit suicidality was not normally distributed, $D(130) = .37, p > .05$. Therefore nonparametric tests were used when conducting analyses using explicit suicidality. Furthermore, a Kolmogorov-Smirnov test indicated that internalized shame was significantly nonnormally distributed, $D(130) = .10, p > .05$. Therefore, after adding +1 to the variable (in order ensure all values were nonzero), log transformation was applied. An additional Kolmogorov-Smirnov test indicated that, after the log transformation, the internalized shame variable was no longer significantly nonnormally distributed, $D(130) = .07, p = .20$. Therefore, all analyses used this log transformed internalized shame variable.

Preliminary Analyses of Primary Outcomes

Means, medians, and standard deviations for all variables included in the study are presented in Table 3.

Table 3

Means, Medians, Standard Deviations and Ranges for Measures Included in the Study

Variable	Mean	Median	Standard Deviation	Range
Perfectionism (Independent Variables)				
Self-Oriented Perfectionism	4.27	4.27	.70	2.20 - 5.60
Socially Prescribed Perfectionism	4.25	4.17	.74	2.80 - 6.13
Other-Oriented Perfectionism	3.79	3.80	.52	2.20 - 5.73
Doubts About Actions	3.30	3.50	.94	1.25 - 5
Concern Over Mistakes	2.88	2.88	.94	1.13 - 5
Parental Criticism	2.81	2.75	1.06	1 - 5
Parental Expectations	3.29	3.20	.97	1 - 5
Personal Standards	3.46	3.30	.69	1.86 - 5
Organization	4.02	4.00	.78	2 - 5
Maladaptive Perfectionism	.00	-.01	.78	-1.80 - 1.88
Adaptive Perfectionism	.00	-.06	.69	-1.61 - 1.92
Suicidality (Dependent Variables)				
Explicit Suicidality	2.84	4.00	0	0 - 28
Implicit Suicidality	-.44	-.46	.37	-1.47 - .44
Moderator Variable				
Perfectionistic Self-Presentation	4.24	4.24	1.03	1.52 - 6.63

Mediator Variables

Internalized Shame	1.54	1.42	.99	0 - 3.96
Externalized Shame	2.06	1.94	1.19	0 – 4.67
Difficulties with Emotion Regulation	87.55	88.00	25.97	13 - 155
Self-Compassion	3.07	3.10	.68	1.18 - 4.74

Covariate Variables

Hopelessness	3.09	2.00	3.52	0 - 18
Depression Severity	10.12	6.00	9.60	0 - 42

Correlation coefficients were calculated for each of the measures included in the study. See Table 4.

Table 4

Correlation Coefficients of Measures Included in the Study.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. BSS	--																		
2. d/s-IAT	.13	--																	
3. SOP	.20*	-.04	--																
4. SPP	.35***	.03	.49**	--															
5. OOP	.14	.07	.24		--														
6. DA	.32***	-.08	.50***	.39***	.21*	--													
7. CM	.35***	-.04	.59***	.52***	.22*	.59***	--												
8. PC	.36***	-.01	.39***	.58***	.24**	.44***	.58***	--											
9. PE	.15	-.01	.44***	.55***	.22*	.27**	.48***	.65***	--										
10. PS	.10	-.08	.61***	.38***	.14	.40***	.61***	.38***	.51***	--									
11. O	-.02	-.06	.37***	.06	.10	.19*	.18*	.15	.15	.42***	--								
12. MP	.40***	-.03	.62***	.77***	.33***	.68***	.82***	.83***	.76***	.57***	.18*	--							
13. AP	.17	.00	.79***	.45***	.48**	.45***	.57***	.41***	.46***	.78***	.68***	.59***	--						
14. PSP	.36***	.02	.53***	.52***	.22*	.55***	.72***	.39***	.35***	.44***	.16	.65***	.46***	--					
15. DERS	.47***	.02	.38***	.53***	.31***	.59***	.59***	.50***	.30***	.27**	.05	.65***	.33***	.55***	--				
16. ISS	.55***	.05	.45***	.51***	.27***	.61***	.71***	.49***	.27**	.33*	.09	.68***	.39***	.71***	.73***	--			
17. OAS	.39***	-.03	.25**	.49***	.21*	.43***	.57***	.48***	.27**	.17*	-.11	.58***	.20*	.46***	.55***	.72***	--		
18. SCS	-.47***	.06	-.40***	-.47***	-.17	-.57***	-.69***	-.42***	-.24**	-.33***	.03	-.62***	-.29***	.69***	-.74***	-.80**	.74***	--	
19. BHS	.51***	.09	.21*	.36***	.07	.44***	.43***	.35***	.11	.14	-.06	.42***	.13	.37***	.59***	.59***	.59***	-.61***	--
20. DASS	.53***	.05	.35***	.45***	.23**	.54***	.51***	.42***	.21*	.26**	-.08	.55***	.25**	.51***	.73***	.71***	.73***	-.67***	.56***

Note. BSS = Scale for Suicide Ideation; d/s-IAT = Death/suicide Implicit Association Test; SPP = Socially Prescribed Perfectionism; SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; CM = Concern over Mistakes; DA = Doubts about Actions; PE = Parental Expectations; PC = Parental Criticism; PS = Personal Standards; O = Organization; MP = Maladaptive Perfectionism (SPP, CM, DA, PE and PE); AP = (Adaptive Perfectionism (SOP, OOP, PS and O); PSP = Perfectionistic Self-presentation; DERS = Difficulties in Emotional

Regulation Scale; ISS = The Internalized Shame Scale; OAS = The Other as Shamer Scale; SCS = Self-Compassion Scale; BHS = Beck Hopelessness Scale; DASS= Depression Anxiety Stress Scales, 21-item version. * $p < .05$; ** $p < .01$; *** $p < .001$.

Primary Analyses

Hypothesis 1a: Maladaptive perfectionism will be positively correlated with implicit and explicit suicidality.

- a) **Implicit suicidality:** A partial Pearson correlation coefficient indicated that, while controlling for depression severity and hopelessness, there was not a significant partial correlation between maladaptive perfectionism and implicit suicidality, $r(124) = -.08$, $N = 128$, $p = .36$.

Explicit suicidality: A partial Spearman correlation coefficient indicated that, while controlling for depression severity and hopelessness, there was not a significant partial correlation between maladaptive perfectionism and explicit suicidality, $r(125) = .11$, $N = 129$, $p = .21$.

Given the research to date on the relationship between SPP, specifically, and suicidality, we ran additional exploratory analyses of the relationship between SPP and both implicit and explicit suicidality.

- a) **Implicit suicidality:** A partial Pearson correlation coefficient indicated that, while controlling for depression severity and hopelessness, there was not a significant partial correlation between SPP and implicit suicidality, $r(124) = .03$, $N = 128$, $p = .75$.

Explicit suicidality: A partial Spearman correlation coefficient indicated that, while controlling for depression severity and hopelessness, there was not a significant partial correlation between SPP and explicit suicidality, $r(125) = .10$, $N = 129$, $p = .25$.

Hypothesis 1b: Adaptive perfectionism will not be significantly correlated with implicit suicidality or explicit suicidality.

Implicit suicidality: A partial Pearson correlation coefficient indicated that, while controlling for depression severity and hopelessness, there was not a significant partial correlation between adaptive perfectionism and implicit suicidality, $r(124) = -.02$, $N = 128$, $p = .79$.

Explicit suicidality: A partial Spearman correlation coefficient indicated that, while controlling for depression severity, there was not a significant partial correlation between adaptive perfectionism and explicit suicidality, $r(125) = .06$, $N = 129$, $p = .53$.

Hypothesis 2a: The effect of maladaptive perfectionism on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality.

- a) Multivariate regression indicated that, when controlling for depression severity and hopelessness, the effect of maladaptive perfectionism on implicit suicidality, $F(4) = -.29$, $\eta^2 = .00$, $p = .77$, was not significantly greater than the effect of maladaptive perfectionism on explicit suicidality, $F(4) = .99$, $\eta^2 = .01$, $p = .33$. See Table 5.

Table 5

Multivariate Regression of Maladaptive Perfectionism on Implicit and Explicit Suicidality, Controlling for Depression Severity and Hopelessness

Dependent Variable	Predictor	η^2	95% CI	p value
Implicit Suicidality	Maladaptive Perfectionism	.00	-.02, .02	.77
	Depression Severity	.00	-.00, .00	.65
	Hopelessness	.00	-.00, .01	.84
Explicit Suicidality	Maladaptive Perfectionism	.01	-.39, 1.17	.33

Depression Severity	.05	.02, .16	.01
Hopelessness	.05	.05, .42	.01

Hypothesis 2b: Furthermore, this effect will be qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism, such that the effect of maladaptive perfectionism on implicit suicidality will be greater than the effect of maladaptive perfectionism on explicit suicidality amongst individuals that are high in perfectionistic self-presentation.

b) Given that we did not find that the effect of maladaptive perfectionism on implicit suicidality was significantly greater than the effect of maladaptive perfectionism on explicit suicidality, we did not conduct additional analyses to determine whether this effect was qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism.

Hypothesis 3: Tests of indirect effects of internalized shame, externalized shame, difficulties with emotion regulation and self-compassion, on the relationship between maladaptive perfectionism and suicidality (implicit and explicit suicidality).

Due to there not being a significant direct effect between maladaptive perfectionism and both implicit and explicit suicidality when controlling for depression severity and hopelessness, we did not conduct a test of indirect effects on this model. However, there was a significant direct effect of maladaptive perfectionism on explicit suicidality, but not implicit suicidality, when depression severity and hopelessness were not included in the model. Therefore, without including depression severity and hopelessness in the model, we conducted an exploratory test of internalized shame, externalized shame, difficulties with emotion regulation and self-compassion as mediators of the relationship between maladaptive perfectionism and explicit suicidality.

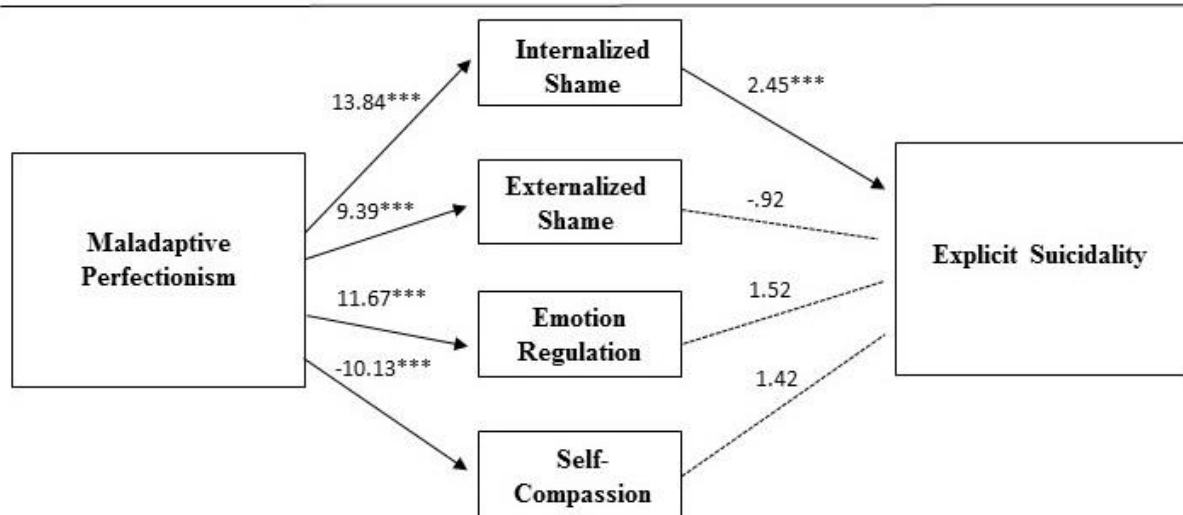
See Figure 1 for structural equation model of the relationship between maladaptive perfectionism and explicit suicidality. Initial model fit indicated that the model showed adequate fit, $\chi^2 (1) = 2.48, p = .12$, comparative fit index (CFI) = 1.00, Tucker–Lewis index (TLI) = .95, root-mean-square error of approximation (RMSEA) = .11, standardized root-mean-square residual (SRMR) = .02. Modification indices did not suggest the need for corrections to the model, therefore no changes were made and all original variables remained in the model.

Results of the SEM indicated that there was a significant direct effect of maladaptive perfectionism on explicit suicidality, $B = .31, SE = .09, \beta = 3.85.86, p < .001$. Furthermore, maladaptive perfectionism significantly predicted: a) internalized shame, $B = 0.67, SE = .05, \beta = 13.84, p < .001$, b) externalized shame, $B = 0.56, SE = .06, \beta = 9.39, p < .001$, c) difficulty regulating emotion, $B = .63, SE = .05, \beta = 11.67, p < .001$ and d) self-compassion, $B = -.59, SE = .06, \beta = -10.13, p < .001$.

When testing for indirect effects of the relationship between maladaptive perfectionism and explicit suicidality through the mediating variables of: a) internalized shame, b) externalized shame, c) difficulties with emotion regulation and d) self-compassion, there was a significant indirect effect from maladaptive perfectionism to explicit suicidality, $B = .39, SE = .06, \beta = 6.96, p < .001$. Within this model, the indirect effect of maladaptive perfectionism on explicit suicidality through internalized shame was significant, $B = .23, SE = .09, \beta = 2.45, p = .01$. The indirect of maladaptive perfectionism on explicit suicidality through externalized shame ($B = -.05, SE = .06, \beta = -.92, p = .36$), difficulties with emotion regulation ($B = .11, SE = .07, \beta = 1.52, p = .13$), and self-compassion ($B = .10, SE = .07, \beta = 1.42, p = .16$), were not significant.

Figure 1

Structural Equation Model of the Relationship Between Maladaptive Perfectionism and Explicit Suicidality Via Internalized Shame, Externalized Shame, Difficulties with Emotion Regulation and Self-Compassion.



Note. *** = $p < .001$. Solid lines = Significant Pathway, Dotted lines = Nonsignificant Pathway. Maladaptive Perfectionism = Socially Prescribed Perfectionism, Concern Over Mistakes, Doubts about actions, Parental Criticism and Parental Expectations. Emotion Regulation = Difficulties with Emotion Regulation. Values denote beta weights.

Chapter IV: Discussion

Suicide is an issue of major and growing concern worldwide. This study was designed to further enhance scientific understanding of the influence of a key transdiagnostic factor, namely perfectionism, on suicidality. This study was designed to test a number of specific hypotheses about the relationship between perfectionism and suicidality. First, the study tested the relationship between perfectionism (adaptive and maladaptive) and suicidality (implicit and explicit), while controlling for depression severity and hopelessness. This study was the first on the perfectionism-suicide relationship to use a behavioural measure of suicidality in general, and an implicit measure in particular. Second, this study compared the effects of maladaptive perfectionism on implicit and explicit suicidality, and tested whether individuals high in perfectionistic self-presentation were less likely to report on their suicidality explicitly than implicitly. Finally, in order to identify the pathways that account for the perfectionism-suicide link, this study was designed to explore internalized shame, externalized shame, difficulties with emotion regulation and self-compassion as mediators of the relationship between maladaptive perfectionism and suicidality.

Maladaptive Perfectionism and Suicidality

In contrast to our first hypothesis, when controlling for depression severity and hopelessness, we did not find a significant relationship between either maladaptive perfectionism or SPP and explicit suicidality. There are two potential explanations for these results. First, controlling for depression severity and hopelessness may have resulted in a nonsignificant relationship between perfectionism and suicidality due to the shared variance between maladaptive perfectionism and both depression severity and hopelessness. This possibility is supported by research showing that perfectionism is highly correlated with both depression severity and hopelessness (Donaldson et al., 2000), and suggests that “controlling” for such

overlapping variables may be unhelpful when conducting research on the relationship between maladaptive perfectionism and suicidality. Second, in so far as there is a relationship between suicidality and both maladaptive perfectionism and SPP, this relationship may be due to the influences of depression severity and hopelessness that do not overlap with maladaptive perfectionism itself. Accordingly, when depression severity and hopelessness were not controlled for, we found a positive relationship between explicit suicidality and both maladaptive perfectionism and SPP. Few studies to date had explored the relationship between the composite score of maladaptive perfectionism and suicidality. Furthermore, this study was the first to test whether the relationship between the composite score of maladaptive perfectionism and suicidality is unique. While our findings were in line with past research showing a significant relationship between maladaptive perfectionism and suicidality (Enns et al., 2001), the nonunique relationship between maladaptive and SPP and explicit suicidality is in contrast to a large body of research that has found a unique relationship between SPP and explicit suicidality within clinical (Beevers & Miller, 2004; Hewitt et al., 1992; Hewitt et al., 1994; Hewitt et al., 1997; Hunter and O'Connor, 2003) and nonclinical (Adkins & Parker, 1996; Hewitt et al., 1997) samples. Nonetheless, in line with our finding that both maladaptive and SPP were only significantly associated with explicit suicidality when depression severity and hopelessness were not controlled for, a number of studies have similarly found nonunique relationship between SPP and suicidality, within both clinical (Dean & Range, 1999) and nonclinical samples (Dean et al., 1996). One potential explanation for this discrepancy may be that the majority of studies that found a unique relationship between perfectionism and explicit suicidality used clinical populations, whereas our study used a university population. It may, therefore, be that whether SPP and maladaptive perfectionism are uniquely associated with explicit suicidality is partially

dependent upon the sample population used. For instance, while depression severity and hopelessness might account for the shared variance between maladaptive perfectionism and explicit suicidality within healthy populations, this may not be the case within clinical samples, amongst whom there are more extreme levels of perfectionism and suicidality. Similarly, in comparison with clinical samples that have higher rates of suicidality, levels of suicidality within university samples may not be high enough for them to be uniquely predicted by perfectionism. Indeed, within the current sample mean explicit suicidality was 2.84 ($SD=4.00$), whereas Beck and Steer reported a mean score of 6.75 ($SD=9.75$) within a sample of adult inpatients. Furthermore, given that that suicidality is associated with both depression severity (Nock et al., 2009) and hopelessness (Brown et al., 2000), it is possible that depression severity and hopelessness may simply be pathways through which maladaptive perfectionism leads to suicidality. In line with this explanation, one study found that the relationship between SPP and suicidal ideation went through the path of depression severity, which in turn went through the path of hopelessness to suicidal ideation (Dean & Range, 1999). Thus, it may be that we did not find a unique relationship between explicit suicidality and maladaptive perfectionism, as well as SPP, because depression severity and hopelessness are themselves mediators of the relationship between perfectionism and suicidality. Therefore, additional research, using larger samples, as well as meta-analyses, are necessary to determine whether there is a unique relationship between maladaptive perfectionism and explicit suicidality.

Interestingly, in contrast to our hypothesis, we did not find a significant relationship between maladaptive perfectionism and implicit suicidality, regardless of whether depression severity and hopelessness were controlled for. Given the strong relationship between maladaptive perfectionism and explicit suicidality, as well as research suggesting that the d/s-

IAT is a strong predictor of suicidality, it was expected that maladaptive perfectionism would similarly, or more strongly, be associated with implicit suicidality. This null result may be explained by the nature of the sample in this study. This study included a university student sample; however, aside from one other study, which showed a similar mean and score distribution on the d/s-IAT as our study (Harrison et al., 2014), the majority of research validating the d/s-IAT has been conducted within clinical and suicidal populations. Indeed, it is possible that the d/s-IAT may only be predictive of suicidality amongst individuals high in suicidality. Similarly, the d/s-IAT may not be associated with other measures of suicidality, such as self-report measures of suicide ideation, amongst individuals low in suicidality. Such was the case within the current study, wherein explicit suicidality and implicit suicidality were not significantly correlated with one another. Similarly, within a sample of United States military service members, the d/s-IAT was found not to be significantly correlated with suicide ideation or depression (Chiurliza et al., 2016). This parallel null finding is important for two reasons. First, the study similarly included a nonclinical sample, thereby further suggesting that the d/s-IAT may not be an appropriate proxy of suicidality within nonclinical and nonsuicidal samples. Second, compared to past research on the d/s-IAT, this study had a large sample size ($n=1,548$) and therefore had greater statistical power. Furthermore, within a sample of psychiatrically hospitalized veterans, though the d/s-IAT was predictive of suicide attempts at 6 months follow-up, the d/s-IAT did not differentiate between those who had recently attempted suicide from those who had not (Barnes et al., 2017). Moreover, within a clinical sample of individuals with treatment resistant depression, scores on the death-IAT (a similar task as the IAT used in this study, often used as a measure of suicidality) were not significantly correlated with self-reported suicidal ideation (Price et al., 2014). Thus, these studies may identify an important limitation of

the utility of the d/s-IAT, namely that it may only be predictive of suicidality amongst highly suicidal individuals and that it is not always associated with self-reported suicidal ideation. Further research that uses samples of clinical or highly suicidal individuals will, therefore, be necessary to explore the relationship between perfectionism and implicit suicidality.

Adaptive Perfectionism and Suicidality

In line with our second hypothesis, we did not find a relationship between adaptive perfectionism and suicidality, regardless of whether depression severity and hopelessness were controlled for. These findings are in accordance with research suggesting that certain components of perfectionism may be adaptive or nonproblematic (Bieling et al., 2004; Blankstein et al., 2008). For instance, within clinical and nonclinical populations, studies have not found a significant relationship between components of adaptive perfectionism, such as personal standards and organization and suicidality (For a review, see O'Connor, 2007). Additionally, some research has shown that one component of adaptive perfectionism, OOP, is negatively associated with explicit suicidality (Hewitt et al., 1998; Hunter & O'Connor, 2003). However, in this study, we did not find a significant relationship between OOP and either explicit or implicit suicidality, regardless of whether depression severity and hopelessness were controlled for. This discrepant finding, which may be due to our use of a nonclinical sample, suggests that the role of OOP as a protective factor against suicidality requires further research. Additional research (Stoeber, 2014) has found that OPP is associated with the “dark triad” (i.e. narcissism, Machiavellianism, and psychopathy), further suggesting that it may be improper to classify OOP as an adaptive or positive form of perfectionism. Further complicating whether certain components of perfectionism are appropriately conceptualized as “adaptive,” some studies have found a relationship between SOP (a component of adaptive perfectionism) and

suicidality (Hewitt et al., 1994), while others have not (Dean et al., 1996; Hewitt et al., 1992; Hewitt et al., 1998). Indeed, research has found overlap between so called “adaptive” (or perfectionistic striving) forms of perfectionism are associated with both positive and negative outcomes (For a review, see Stoeber and Otto, 2006). Within the current study, we found that SOP was correlated with explicit suicidality, but not implicit suicidality, only when not controlling for hopelessness and depression severity. Therefore, our findings are in line with past research suggesting a nonunique relationship between SOP and suicidality. These findings are also in line with research showing that SOP may not be entirely adaptive. For instance, SOP has been found to be elevated amongst individuals with eating disorders (Castro-Fornieles et al., 2007). Additionally, in line with past research, we did not find a significant relationship between other components of adaptive perfectionism (i.e., personal standards and organization), suggesting that, while not protective factors for suicidality, these components of perfectionism also do not significantly contribute to the relationship between perfectionism and suicidality. Overall, this study suggests that certain components of adaptive perfectionism (i.e., SOP) are positively, but not uniquely, associated with suicidality, while others (i.e., OOP, PS, and O) are not significantly associated with suicidality. These findings suggest that identifying certain components of perfectionism, such as SOP, as being adaptive overall may be too simplistic. It may be that components of adaptive perfectionism, such as SOP, are associated with some positive outcomes (e.g., goal pursuit) while at the same time being associated with other negative outcomes, such as explicit suicidality. Nonetheless, little research to date had explored the relationship between the composite score of adaptive perfectionism and suicidality. Thus, this is one of the first studies to show that the composite of adaptive perfectionism may not be significantly associated with suicidality.

Maladaptive Perfectionism and Explicit Versus Implicit Suicidality

Contrary to hypothesis 2a, we did not find that the effect of maladaptive perfectionism on implicit suicidality was greater than the effect of maladaptive perfectionism on explicit suicidality. This null result is likely because there was no effect of maladaptive perfectionism on implicit suicidality while there was an effect of maladaptive perfectionism on explicit suicidality. As described above, the reason for there being no effect of maladaptive perfectionism on implicit suicidality may be because the d/s-IAT has primarily been validated as a tool for measuring implicit suicidality within clinical and highly suicidal populations. Given the lower levels of suicidality within nonclinical populations, the d/s-IAT may not have been an appropriate measure of implicit suicidality within the university sample used in this study. Furthermore, given that no main effect was found, we did not conduct a test to determine whether the effect was qualified by an interaction between perfectionistic self-presentation and maladaptive perfectionism.

Indirect Effects of Maladaptive Perfectionism and Explicit Suicidality

Given that, while controlling for depression severity and hopelessness, there was not a direct relationship between maladaptive perfectionism and both implicit and explicit suicidality, tests of indirect effects were not conducted using this model. However, because there was a significant nonunique relationship between maladaptive perfectionism and explicit suicidality, tests of indirect effects were conducted without controlling for depression severity and hopelessness in the model. Results of this test indicated that there was a significant relationship between maladaptive perfectionism and each of the proposed mediator variables. Specifically, consistent with prior research, there was a positive relationship between maladaptive perfectionism and internalized shame (Chen et al., 2015) and difficulties with emotion regulation

(Richardson et al., 2014), as well as a negative association between maladaptive perfectionism and self-compassion (Mehr & Adams, 2016). Furthermore, this study is the first to show that maladaptive perfectionism is associated with externalized shame. This result is important as it suggests that, in line with the PDSM, maladaptive perfectionism may not only be associated with negative self-evaluation but perceived negative evaluation from others as well.

The results of this test indicated that, of the variables included in the model (i.e., internalized shame, externalized shame, difficulties with emotion regulation and self-compassion), internalized shame was the only variable that significantly mediated the relationship between maladaptive perfectionism and explicit suicidality. This finding is in line with theorists (Hamachek, 1978; Kohut, 1972; Sorotzkin, 1985) and empirical research (Chen et al., 2015; Fedewa et al., 2005; Stoeber et al., 2007) suggesting that perfectionism may be associated with high levels of internalized shame. Furthermore, this finding is understandable given research suggesting that internalized shame is associated with suicidality (Dutra et al., 2008; Hastings et al., 2002; Van Orden et al., 2010). It is also in line with research suggesting that shame mediates the relationship between maladaptive perfectionism and depression severity (Ashby et al., 2006), a predictor of suicidality itself (For a review, see Hawton, Casañas, Haw, & Saunders, 2013). Thus, though the other mediator variables included in the model were also significantly associated with explicit suicidality, these results suggest that, of the variables included in the model, internalized shame is an underlying factor that accounts for the relationship between maladaptive perfectionism and explicit suicidality.

In support of the escape theory of suicide (Baumeister, 1990), these findings suggest that maladaptive perfectionism is associated with suicidality due to the intense negative emotion that perfectionists experience as a result of their global negative evaluation of themselves.

Interestingly, contrary to the social disconnection model of perfectionism, this study found that the association between maladaptive perfectionism and explicit suicide was mediated by internalized shame rather than externalized shame. Thus, while perceiving others as having high standards of one's self (SPP), a component of maladaptive perfectionism may result in increased suicidality, it is the *internally* experienced negative self-evaluation, rather than *perceived negative evaluation by others*, that appears to be the underlying pathway through which perfectionism leads to suicidality. This is understandable in light of the escape theory of suicide (Baumeister, 1990), which posits that chronic self-evaluation results in psychological distress that may ultimately drive an individual to use suicide as a means of escaping this distress.

It is interesting to note that, within the examined model, only internalized shame significantly mediated the relationship between maladaptive perfectionism and suicide. There are two potential explanations for this finding. First, it is possible that the other variables (i.e., externalized shame, difficulties with emotion regulation and self-compassion) are not pathways through which maladaptive perfectionism leads to suicidality. Second, it is possible that while each of these variables may function independently as mediators of the relationship between maladaptive perfectionism and explicit suicidality, they were no longer significant mediators once internalized shame was included in the model. This is understandable because internalized shame has been found, both in this study and previous research, to be both conceptually similar to and highly correlated with externalized shame, difficulties with emotion regulation, and self compassion. Thus, internalized shame may have accounted for the influence of the other variables on the relationship between maladaptive perfectionism and explicit suicidality.

Importantly, however, these findings should be interpreted cautiously. Because the relationship between maladaptive perfectionism and explicit suicidality was not significant when

controlling for depression severity and hopelessness, these variables were not included in the model. Therefore, it is possible that internalized shame does not mediate the relationship between maladaptive perfectionism and explicit suicidality after the influence of depression severity and hopelessness are accounted for. Given that the uniqueness of the relationship between maladaptive perfectionism appears in some studies, but not in others, additional research may be necessary to explore whether shame mediates the relationship between maladaptive perfectionism and explicit suicidality, above and beyond the effects of depression severity and hopelessness.

Clinical Implications

The findings of this study have a number of potential clinical implications. First, given that internalized shame appears to be a key explanatory pathway in the relationship between maladaptive perfectionism and suicidality, interventions that specifically target internalized shame might be used to decrease suicidality amongst perfectionistic individuals. To date, no evidence-based interventions for reducing suicidality amongst perfectionistic individuals exist. However, in light of the results of this study, treatments that specifically target shame might be considered as interventions within this population. First, cognitive behavioural therapy (CBT) is an evidenced-based intervention shown to be an efficacious intervention for perfectionism (For a review, see Lloyd, Schmidt, Khondoker, & Tchanturia, 2015) and has been found to reduce internalized shame (Hedman, Ström, Stünkel, & Mörtberg, 2013). However, no studies to date have explored the efficacy of CBT as a means of reducing suicidality among perfectionistic individuals. An additional evidence-based intervention that might help to reduce internalized shame and suicidality amongst perfectionistic individuals is dialectical behaviour therapy (DBT). In addition to arguably being the gold standard treatment for suicidality itself, DBT focuses on

improving emotion regulation skills and increasing acceptance (Linehan, 1993). Furthermore, there are add-on components of DBT that have been designed specifically for the targeting of shame within treatment (Rizvi & Lenhan, 2005). This study found that internalized shame in particular, rather than externalized shame was the pathway through which maladaptive perfectionism led to suicidality, thereby suggesting that it is one's response to failure, rather than the perception that others view one as a failure, that results in high levels of suicidality amongst perfectionists. Given that internalized shame is an inward focused negative emotion, DBT might assist perfectionistic individuals in learning to regulate their internalized shame, thereby reducing suicidality. In light of the findings of this study, using evidence-based interventions, such as CBT and DBT, that directly target internalized shame might be of benefit as means of reducing suicidality amongst perfectionistic individuals.

Strengths and Limitations

This study had a number of strengths. First, it incorporated both behavioural and self-report measures of suicidality. This study was the first to include a behavioural measure of suicidality in relation to perfectionism. Given the issues associated with self-report in general, and hesitancy to disclose negative information about the self among perfectionistic individuals in particular, using a multimethod approach for studying suicidality is important for an improved understanding of the link between perfectionism and suicide. Second, this study explored multiple potential mediators of the relationship between maladaptive perfectionism and was the first to explore the influence of key pathways (i.e., internalized shame, externalized shame, difficulties with emotion regulation and self-compassion) through which maladaptive perfectionism and suicidality were theoretically linked. Third, there are a number of differing ways of measuring adaptive and maladaptive perfectionism, and this study used one particular

method (Bieling et al., 2004). However, other studies have measured perfectionistic striving (i.e., adaptive perfectionism) and perfectionistic concerns (i.e., maladaptive perfectionism) using some of the perfectionism subscales included in this study, while excluding others, in order to explore outcomes associated with perfectionism, including suicidality (e.g., Dunkley et al., 2000; For a review, see Stoeber and Otto, 2006). Future research might benefit from exploring the relationship between suicidality and adaptive and maladaptive perfectionism using alternative methods of measurement. Finally, an additional strength of this study is that it included analyses that both controlled, and did not control for, psychological factors associated with suicidality, including depression severity and hopelessness. This is important as it thereby allowed for an exploration of both the unique, and nonunique, associations between perfectionism and suicidality.

This study has a number of important limitations that need to be considered. First, the study uses a cross-sectional design, which limits the extent to which the causality of internalized shame on the relationship between perfectionism and explicit suicidality can be inferred. Future research should explore the pathways that contribute to increases in suicidality amongst perfectionistic individuals over time. Second, this study included a university student sample, which limits the extent to which the findings can be generalized to nonstudent groups, such as clinical populations. Nonetheless, given that perfectionism and suicidality are particularly problematic issues within university populations, this specific sample population is important for conducting research on the issue of perfectionism and suicidality. Finally, while this study did use an adequate sample size based on previous research into the unique relationship between perfectionism and suicidality, use of a larger sample may have nonetheless allowed for the detection of a unique relationship between maladaptive perfectionism and suicidality. Therefore,

future research seeking to explore whether perfectionism is uniquely associated with suicidality, and the pathways through which they are connected, should consider including larger sample sizes.

Future Directions

There are a number of directions that future research should continue to explore. First, research should continue to explore the extent to which maladaptive perfectionism is a unique predictor of suicidality. Specifically, research based on larger sample sizes and clinical samples will help to elucidate the extent to which the relationship between maladaptive perfectionism and suicidality is accounted for by other known psychological risk factors, such as depression severity and hopelessness. Second, future research should continue to explore the explanatory pathways, including emotions other than shame, which account for the relationship between maladaptive perfectionism and suicidality. Developing a more comprehensive understanding of the pathways that account for the relationship between perfectionism and suicidality will ultimately contribute to suicide prevention efforts. Research should therefore also begin to explore the effectiveness of interventions that specifically target such pathways (e.g., depression, hopelessness, shame) as a means of reducing suicidality amongst perfectionistic individuals. Third, future research should aim to replicate these findings and continue to further explore the relationship between maladaptive perfectionism and implicit suicidality within clinical populations. Given that the pathways that lead to suicidality amongst highly suicidal individuals may be different than those with low levels of suicidality, such research is essential for developing a complete understanding of the relationship between perfectionism and suicide amongst those most at risk. Fourth, longitudinal research should be conducted to determine whether maladaptive perfectionism prospectively predicts suicidality, as well as whether the

causality of internalized shame on the relationship between perfectionism and suicidality can be verified. Finally, research should continue to explore differences between implicit and explicit measures of suicidality and the utility of using implicit measures of suicidality as a means of detecting suicidality within nonclinical populations.

In conclusion, this research contributes to a greater understanding of the relationship between maladaptive perfectionism and varying forms of suicidality. This research also helps to inform future interventions for suicidal perfectionists by identifying internalized shame as a key explanatory pathway, and potential treatment target, of the relationship between maladaptive perfectionism and suicidality.

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