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The relationship of perfectionism to suicide ideation and attempts in a large online sample

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ABSTRACT

Perfectionism is a personality construct hypothesized to increase suicide risk. Previous research observed greater levels of perfectionism among those with histories of suicidal thoughts and behaviors. However, it is unclear whether perfectionism is best conceptualized as a predictor of suicide ideation, suicide attempts among ideators, or both. To answer this question, we recruited a large online US-based sample to examine differences on two self-report measures of perfectionism among participants with (1) a history of suicide attempts (attempters; n = 107), (2) a history of suicide ideation but no history of suicide attempts (ideators; n = 164), and (3) no history of either suicide ideation or suicide attempts (nonsuicidal; n = 194). Medium effect size differences were obtained on two dimensions of perfectionism: Socially Prescribed Perfectionism (d = 0.47) and Nondisplay of Imperfection (d = 0.53) were both higher in ideators compared to nonsuicidal participants. These differences remained statistically significant when controlling for symptoms of depression and anxiety. In contrast, when comparing ideators to attempters, only small to negligible differences were obtained on all dimensions of perfectionism (d range = 0.00–0.26). Our findings suggest that perfectionism is likely associated with the development of suicide ideation, but not the progression from suicide ideation to suicide attempts.

1. Introduction

Suicide is a leading cause of global mortality. The World Health Organization (WHO) estimates that > 800,000 individuals die by suicide each year, and that suicide is the 17th leading cause of global death (World Health Organization, 2014). Across North America, suicide is the 10th leading cause of death and the 2nd leading cause of death among adolescents and young adults (Centers for Disease Control and Prevention, 2015a, 2015b). In addition to fatal suicide attempts, it is estimated that 20 to 25 nonfatal suicide attempts are made (Centers for Disease Control and Prevention, 2015a, 2015b), which often result in severe injury, shame, and personal suffering. Despite extensive scientific, policy and awareness efforts aimed at enhancing suicide prevention and intervention, suicide mortality rates have remained largely unchanged (World Health Organization, 2014). Understanding the risk factors for suicide is crucial to predicting and preventing suicide attempts.

1.1. Distinguishing suicide attempters from ideators

The US Centers for Disease Control and Prevention (CDC) define suicidal ideation as thinking about, considering, or planning suicide (CDC, 2015a, 2015b). The CDC defines suicide attempt as a nonfatal, self-directed, potentially injurious behavior with the intention to die even if the behavior does not result in injury. While suicide ideation is one of the strongest predictors of suicidal attempts, only a minority of suicide ideators go on to make a suicide attempt (Nock et al., 2008). Importantly, epidemiological and meta-analytic evidence suggests that strong predictors of suicide ideation are minimally predictive of suicide attempts (Kessler, Borges, & Walters, 1999; May & Klonsky, 2016; Nock, Borges, & Ono, 2012). For example, depression, hopelessness, and impulsivity robustly predict suicide ideation, but are no different between suicide attempters and suicide ideators who have never attempted suicide (Klonsky & May, 2010; May & Klonsky, 2016; Qiu, Klonsky, & Klein, in press). This pattern has led Klonsky and May (2014) to suggest that suicide research, theory, and prevention should be guided by an ideation-to-action framework. From this perspective, (a) the development of suicide ideation and (b) the progression from suicide ideation to attempts are understood to have different predictors and explanations (Klonsky & May, 2014; Klonsky, Saffer, & Bryan, in press). A key implication of this framework is that research should aim to determine whether correlates of suicidality are most predictive of suicide ideation, suicide attempts, or both.

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1.2. The potential role of perfectionism in suicide ideation and attempts

Perfectionism is a multidimensional personality trait characterized by a strong desire to pursue excessively high-performance standards and being overly self-critical of one's performance (Flett & Hewitt, 2002). Hewitt and Flett (1991) conceptualize of perfectionism as having three maladaptive dimensions; self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Self-oriented perfectionism (SO) involves stringent evaluation of self-directed behaviour and setting exact standards or ideals for oneself as well as, striving for perfection in oneself and avoiding failures (Hewitt & Flett, 1991). Other-oriented perfectionism (OO) pertains to externally directed perfectionistic behaviour, such as placing importance and unrealistic standards on others being perfect (Hewitt & Flett, 1991). The third dimension, socially prescribed perfectionism (SP), involves the belief that others have unrealistic standards for oneself and expect perfection of oneself which one is unable to meet (Hewitt & Flett, 1991). Such standards and expectations are seen as excessive and uncontrollable. Hewitt, Newton, Flett, and Callander (1997) suggest that SP is uniquely associated with maladjustment, increased failures, and stress creating a social form of hopelessness which may be associated with suicidality.

In addition to trait perfectionism, Hewitt et al. (2003) maintain that perfectionists have a need to appear perfect to others and to conceal their imperfections, a tendency referred to as perfectionistic self-presentation (PSP). This construct is conceptualized by Hewitt et al., 2003 as being composed of three dimensions; perfectionistic self-promotion, nondisplay of imperfection, and nondisclosure of imperfection. Perfectionistic self-promotion is characterized by actively displaying one's perfection, aiming to impress others, and gain admiration. Nondisplay of imperfection involves aiming to prevent others from noticing imperfect behaviors. Nondisplay of imperfection is concerned with concealing one's imperfections and can include the avoidance of verbal disclosures of imperfections, such as admitting one's mistakes.

Theory suggests that perfectionism is a personality construct that may be relevant in understanding suicide risk and outcomes (Hewitt, Flett, Sherry, & Caelian, 2006). Elevated perfectionism has been associated with a greater likelihood of several psychiatric risk factors, including depression and anxiety (Smith et al., 2016; Smith, Sherry, Mushquash, in press; Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018), and has been conceptualized as a vulnerability factor for attempting suicide (Flett, Hewitt, & Heisel, 2014; Hewitt et al., 2006; Roxborough et al., 2012; for reviews see O'Connor, 2007, Smith, Sherry, Mushquash, in press and Smith, Sherry, Chen et al., in press). Further, Flett et al. (2014) discuss how the experience of perfectionistic thoughts may contribute to rigid thinking styles and feelings of inferiority, deficiency, and hopelessness which may prompt and escalate suicidal ideation. The authors also explain that the engagement in PSP behaviors can facilitate self-loathing, hopelessness, loneliness, a sense of isolation, and interpersonal alienation, which may potentiate the risk of suicidal ideation and suicidal attempts (Flett et al., 2014; Hewitt et al., 2006).

Given the above theoretical context, several studies have sought to examine the relationship between perfectionism and suicide ideation and attempts. Most of these studies have focused on ideation. For example, Hamilton and Schweitzer (2000) reported a significant positive relationship between increased levels of perfectionism and suicide ideation. Further, Hewitt, Flett, and Turnbull-Donovan (1992) as well as Hewitt et al. (1997) found the SP facet of perfectionism to be significantly correlated with suicide ideation in a sample of psychiatric inpatients. Similarly, Klibert, Langhinrichsen-Rohling, and Saito (2005) used a larger sample of 475 undergraduates and reported that SP was significantly correlated with suicide ideation, whereas SO was not. Moreover, in a sample of 121 inpatients hospitalized for depression, Beevers and Miller (2004) found that higher levels of perfectionism among inpatients were associated with greater levels of suicide ideation 6 months later. Thus far, these studies implicate perfectionism in the development of suicide ideation, but not in the progression from suicide ideation to suicide attempts.

To date, a small number of studies have examined the relationship of perfectionism to suicide attempts. In a sample of 120 adolescent suicide attempters, Boergers, Spirito, and Donaldson (1998) found that adolescents who described death as the primary motivation for a suicide attempt reported greater levels of perfectionism. Hewitt, Norton, Flett, Callander, and Cowan (1998) examined perfectionism in a small sample of inpatients (39 suicide attempters and 39 matched non-attempters) diagnosed with alcohol dependence and found higher SP in the attempter group when compared to the non-attempter group. Roxborough et al. (2012) examined PSP, SP, suicide outcomes, and bullying in a sample of 152 psychiatric outpatient children and adolescents from an anxiety and depression clinic, reporting that both SP and PSP were associated with suicide potential in youth. However, since all or virtually all attempters also have histories of suicide ideation (Klonsky, May, & Saffer, 2016), it is unclear whether these results link perfectionism to ideation, attempts among ideators, or both. This is a critical point given the well-established need to distinguish predictors of ideation from predictors of attempts among ideators (Kessler et al., 1999; Klonsky & May, 2014; May & Klonsky, 2016; Nock et al., 2008).

A recent meta-analysis by Smith, Sherry, Mushquash (in press) and Smith, Sherry, Chen et al. (in press) helps synthesize this large literature. There are two main findings from this meta-analysis. First, Smith et al. (in press) observed that SP predicted suicide ideation in longitudinal studies. Second, Smith et al. (in press) linked perfectionistic concerns and SP to suicide attempts. The findings from the aforementioned studies suggest that perfectionism is related to suicide ideation and distinguishes suicide attempters from non-attempters. What remains unclear, however, is whether perfectionism distinguishes suicide attempters from suicide ideators.

The present, exploratory study compares self-reported perfectionism among individuals with a) a history of suicide attempts (attempters), b) a history of suicide ideation but no history of attempts (ideators), and c) no history of either suicide ideation or attempts (nonsuicidal). Given that depression and anxiety are associated with both perfectionism (Egan, Wade, & Shafran, 2011; Smith et al., 2016; Smith, Sherry, Mushquash, in press; Smith et al., 2018) and suicide ideation (Klonsky et al., 2016; May & Klonsky, 2016), we will also examine if these variables may help account for the relationship of perfectionism to suicide ideation and suicide attempts.

2. Methods

2.1. Procedure

Participants were recruited from Amazon's Mechanical Turk (MTurk), an online platform where individual complete tasks for monetary compensation. Participation in the study was limited to participants residing in United States who had obtained 90% approval rating in successfully a minimum of 100 tasks on MTurk. The study used a screening questionnaire to assess individuals' histories of suicide ideation and suicide attempts. Eligible participants were then presented with the option of completing a second task that included the perfectionism measures, among others.

For the screening questionnaire, potential participants were asked to complete a study estimated to require between 1 and 3 min of their time to complete. Participants were notified that they would be compensated $0.15 for their participation. Participants were provided with a link to a screening questionnaire hosted by Qualtrics, an online questionnaire software company. To avoid multiple survey completions by the same MTurk participant, Qualtrics restrictions allowing one response per IP address and one response per MTurk ID were enabled. Furthermore, participants had to complete a “captcha” or “reverse Turing test” to verify that human participants were completing the

questionnaires as opposed to programs (bots) designed to automatically complete MTurk HITs for payment. Upon providing informed consent, participants completed the screening questionnaire which included the 10-item Youth Risk Behaviour Survey – Suicide Screening Questionnaire (YRBS; Brener et al., 2002; Kolbe, Kann, & Collins, 1993) assessing lifetime and past 12-month history of suicide ideation and suicide attempts. Based on responses to the pre-screen questionnaire, participants were slotted into one of three groups: nonsuicidal participants (those that endorsed no lifetime history of suicide ideation or suicide attempts), suicide ideators (participants with a lifetime history of suicide ideation but no history of suicide attempts), and suicide attempters (participants who endorsed a lifetime history of suicide ideation and suicide attempts).

The first 200 participants from each subgroup (attempters, ideators, nonsuicidal) were then invited to complete a longer survey, estimated to require approximately 45–50 min of their time for an additional payment of $4.50. Participants who agreed to participate in the longer survey were required to provide additional informed consent prior to participating. Upon providing consent, participants completed questionnaires assessing demographic information, standardized measures assessing aspects of perfectionism, suicidality, as well as other clinical variables. Attention checking questions were used to ensure that participants were paying attention to the questions being asked. These questions requested that participants either select a particular answer ("Please select Sometimes") or respond to a question with only one possible correct answer ("Have you won more than two Noble prizes?")

2.2. Participants

Of the 600 screening participants (200 attempters, 200 ideators, 200 nonsuicidal) who agreed to complete the larger study, 516 completed the full study measures. A further 51 flagged one or more of the validity checks and were therefore removed. Removing participants who flagged the validity checks left a total of 465 participants; 194 lifetime nonsuicidal participants, 164 lifetime ideators, 107 lifetime attempters. Participants reported a mean age of 37.4 years (SD = 12.9; Range = 18–72 years). Over half of the participants were female (61.1%, n = 284). The majority of participants reported Caucasian ethnicity (79.4%; n = 369), identified as heterosexual (85.4%; n = 397) and reported being a college or university graduate (36.6%; n = 170).

2.3. Measures

Demographics. Standard demographic information such as, age, gender, and race/ethnicity were collected on a self-report form.

Youth Risk Behaviour Survey – Suicide Screening Questionnaire (*YRBS*; Brener et al., 2002; Kolbe et al., 1993). The YRBS is a large-scale survey administered in the United States by the Centre for Disease Control assessing health risk behaviors including lifetime suicide ideation, suicide planning, and a history of suicide attempt. The YRBS items assessing lifetime history of suicide ideation and attempts were utilized to screen participants into the three study groups: attempters, ideators without attempts, and nonsuicidal. The YRBS suicide questions have demonstrated good reliability (Brener et al., 2002; May & Klonsky, 2011).

Multidimensional Perfectionism Scale (*MPS;* Hewitt & Flett, 1991). The MPS is a 45-item measure used to assess 3 dimensions of perfectionism: self-oriented perfectionism (SO; e.g., *One of my goals is to be perfect in everything I do*), other-oriented perfectionism (OO; e.g., *I have high expectations for the people who are important to me*), and socially prescribed perfectionism (SP; *My family expects me to be perfect*). For each question, participants indicate the degree to which they agree or disagree on a scale from 1 (strongly disagree) to 7 (strongly agree). Fifteen questions per scale are combined to create scale total scores. Higher scores indicate more of the domain being measured. Research on the MPS in clinical and nonclinical samples has shown high levels of reliability and validity (Hewitt & Flett, 1991). Cronbach's alpha of the MPS in the current sample was 0.80.

Perfectionism Self-Presentation Scale (*PSPS;* Hewitt et al., 2003). The PSPS is a 27-item measure used to assess three domains of interpersonal expressions of perfectionistic behaviour: Perfectionistic self-promotion (e.g., *I strive to look perfect to others*), Nondisplay of imperfection (e.g., *Errors are much worse if they are made in public rather than in private*), and Nondisclosure of imperfection (e.g., *I should solve my own problems rather than admit them to others*). For each question, participants indicate the degree to which they agree or disagree on a scale from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate more of the domain being measured. The PSPS has shown high levels of reliability and validity (Hewitt et al., 2003). Cronbach's alpha of the PSPS in the current sample was 0.89.

Depression Anxiety Stress Scale (*DASS-21*; Lovibond & Lovibond, 1995; Henrey & Crawford, 2005). The DASS-21 is a shortened version of the original 42-item measure used to assess symptoms of anxiety, depression, and stress during the last seven days. For each question, participants indicate the degree to which each symptom applied to them on a scale from 0 (did not apply at all) to 3 (applied to me very much, or most of the time). The 7-item scales measuring depression and anxiety were used in the present study. The DASS-21 has demonstrated good reliability and validity (Henrey & Crawford, 2005). Cronbach's alpha in the current sample was 0.94 for the Depression scale, 0.88 for the Anxiety scale, 0.90 for the Stress scale, and 0.95 for the combined subscales total score.

Beck Scale for Suicide Ideation (*BSS-5*; Beck, Steer, & Ranieri, 1988). The BSS-5 is a shortened version of the original 19-item measure (first five items) used to measure suicide ideation. Each item utilizes a three-point scale. The first items on the scale measure an individual's wish to live, wish to die, reasons for living and dying, desire to make an active suicide attempt, and passive suicidal desire. Cronbach's alpha in the current sample was 0.86 for the BSS-5.

3. Results

Intercorrelations for the key study variables are presented in Table 1. Below we report differences on measures of perfectionism, first between nonsuicidal participants and ideators, and second between ideators and attempters.

3.1. Nonsuicidal vs. ideators

Independent-samples t-tests were conducted to compare self-reported levels of perfectionism between nonsuicidal participants and ideators. As can be seen in Table 2, nonsuicidal participants and ideators scored differently on some perfectionism subscales but not others. There was a significant difference in levels of SP between nonsuicidal participants and ideators; $t(356) = 4.42$, $p = 0.001$, as well as significant differences in levels of nondisplay of imperfection and nondisclosure of imperfection; $t(356) = 4.95$, $p = 0.001$; $t(356) = 2.91$, $p = 0.004$, respectively. Cohen's d effect sizes for group differences between nonsuicidal participants and ideators ranged from 0.01 (negligible) to 0.53 (medium). The largest differences were obtained for the nondisplay of imperfection subscale of the PSPS and socially prescribed perfectionism subscale of the MPS.

Logistic regressions were utilized to determine whether significant differences on perfectionism levels between nonsuicidal participants and ideators remained after controlling for symptoms of anxiety and depression. In each regression, the relevant perfectionism dimension was included as the predictor, one of the covariates was entered (anxiety or depression), and the outcome was group status (ideators vs. nonsuicidal). Both SP and nondisplay of imperfection maintained statistically significant relationships to group status (ideator vs. nonsuicidal) when controlling for anxiety or depression ($ps < 0.05$; details

Table 1
Intercorrelations for key study variables.

Variables	1	2	3	4	5	6	7	8	9
1. Current ideation (BSS)[a]	–								
2. Lifetime ideation[b]	−0.47	–							
3. Suicide attempt[c]	−0.29	0.46	–						
4. MPS – self-oriented	0.05	−0.05	−0.11	–					
5. MPS – other-oriented	−0.09	0.03	−0.01	0.55	–				
6. MPS – socially-prescribed	0.32	−0.25	−0.18	0.47	0.27	–			
7. PSPS – self-promotion	0.09	−0.11	−0.09	0.70	0.44	0.55	–		
8. PSPS – nondisplay	0.23	−0.27	−0.16	0.45	0.27	0.58	0.69	–	
9. PSPS – nondisclosure	0.26	−0.14	−0.06	0.49	0.24	0.59	0.66	0.65	–

Note. Correlations above 0.08 and 0.13 are statistically significant at alphas of 0.05 and 0.01, respectively.
[a] Beck Scale for Suicide Ideation.
[b] This variable is determined by Youth Risk Behavior Surveillance Survey Q1, "Have you ever seriously thought about killing yourself?".
[c] This variable is determined by Youth Risk Behavior Surveillance Survey Q3, "Have you ever tried to kill yourself?"

Table 2
Differences on MPS and PSPS subscales between nonsuicidal and ideator groups.

	Group	n	Mean	Std. deviation	Std. error mean	*d*
MPS – self-oriented	Ideator	194	67.76	17.65	1.38	0.01
	Nonsuicidal	164	67.58	17.03	1.22	
MPS – other-oriented	Ideator	194	54.79	11.18	0.87	−0.10
	Nonsuicidal	164	55.96	11.44	0.82	
MPS – socially prescribed	Ideator	194	60.41	14.47	1.13	0.47
	Nonsuicidal	164	53.76	13.93	1.00	
PSPS – self-promotion	Ideator	194	42.63	8.54	0.67	0.19
	Nonsuicidal	164	40.92	9.39	0.67	
PSPS – nondisplay	Ideator	194	50.51	11.49	0.90	0.53
	Nonsuicidal	164	43.94	13.26	0.95	
PSPS – nondisclosure	Ideator	194	30.32	6.22	0.49	0.31
	Nonsuicidal	164	28.31	6.74	0.48	

Note. Cohen's *d* values of 0.3 and above are statistically significant at $p < 0.05$.

Table 3
Differences on MPS and PSPS subscales between ideators and attempter groups.

	Group	n	Mean	Std. deviation	Std. error mean	*d*
MPS – self-oriented	Attempter	107	72.59	19.80	1.91	0.26
	Ideator	164	67.76	17.65	1.38	
MPS – other-oriented	Attempter	107	55.79	11.49	1.11	0.09
	Ideator	164	54.79	11.18	0.87	
MPS – socially prescribed	Attempter	107	63.41	16.21	1.57	0.20
	Ideator	164	60.41	14.47	1.13	
PSPS – self-promotion	Attempter	107	43.71	9.45	0.91	0.12
	Ideator	164	42.63	8.54	0.67	
PSPS – nondisplay	Attempter	107	51.97	12.18	1.18	0.12
	Ideator	164	50.51	11.49	0.90	
PSPS – nondisclosure	Attempter	107	30.30	7.24	0.70	0.00
	Ideator	164	30.32	6.22	0.49	

Note. Cohen's *d* values of 0.25 and above are statistically significant at $p < 0.05$.

available upon request). However, a statistically significant relationship was not observed between suicide ideation and nondisclosure of imperfection after controlling for symptoms of anxiety and depression.

3.2. Ideators vs. attempters

Independent samples *t*-tests revealed that SO was slightly higher in attempters compared to ideators; $t(269) = 2.09$, $p = 0.037$, Cohen's $d = 0.26$). However, t-tests revealed no statistically-significant differences between ideators and attempters on all other subscales of perfectionism measures ($ps > 0.05$). As can be seen in Table 3, Cohen's *d* effect sizes for attempter-ideator differences ranged from 0.09–0.26, suggesting only negligible to minimal group differences.

4. Discussion

This study examined the relationship of self-reported perfectionism to suicide ideation and attempts using a large online sample. In general, perfectionism was moderately higher in suicide ideators compared to nonsuicidal participants. SP and nondisplay of imperfection exhibited the largest elevations in ideators compared to nonsuicidal individuals. This pattern is consistent with previous studies finding greater levels of SP in ideators (i.e., Hewitt et al., 1997; Klibert et al., 2005; Smith, Sherry, Mushquash, in press; Smith, Sherry, Chen et al., in press).

In contrast, when comparing ideators to attempters, perfectionism failed to distinguish between the two groups. Specifically, all perfectionism scales were similar between ideators and attempters, with the exception of SO, which was slightly higher among attempters. This pattern may suggest that the relationship observed in previous studies of perfectionism to suicide attempts (Hewitt et al., 1998; Smith, Sherry, Mushquash, in press; Smith, Sherry, Chen et al., in press) may be due to higher levels of suicide ideation among those with a history of suicide attempts. Our study's findings suggest the relationship between perfectionism and suicide attempts may mainly reflect these variables' shared correlation with suicide ideation, rather than a direct link between perfectionism and the progression from suicidal thoughts to actions.

Taken together, results suggest that perfectionism is best conceptualized as a correlate and possible contributor to suicide ideation, but does not distinguish suicide ideators from suicide attempters. These findings inform the role that perfectionism should play in risk assessment, treatment, and theory. From a risk assessment perspective, perfectionism may be viewed as a risk factor for the development of suicide ideation. However, once a client has been identified as having suicide ideation, information about their perfectionism should not be interpreted as indicating further risk for attempting suicide. In a treatment context, results suggest that reducing perfectionism through treatment may lower suicide ideation/risk for ideation. Finally, our findings contribute to the emerging literature distinguishing predictors of suicide ideation from predictors of attempts among ideators (Klonsky et al., in press).

There are limitations to this study that suggest important future directions. First, the cross-sectional design precludes the examination of the temporal relationship between perfectionism constructs and the onset of suicide ideation and attempts. It is thus unclear whether perfectionism is best thought of as a correlate, cause, or consequence of suicide ideation. Future research should employ longitudinal designs to clarify the role of perfectionism in risk for suicide ideation. Second, this

study relied on self-report measures to assess the variables of interest. The utility of self-reported information may be limited if participants are unwilling or unable to accurately report their experiences. Future research should utilize other modalities and measures to examine the variables of interest (i.e., perfectionism). Further, future research should examine perfectionism within the context of current theories of suicide. For example, Klonsky and May (2015) introduced the Three-Step Theory (3ST), which suggests that pain, hopelessness, and disconnection cause suicide ideation. Thus, it would be useful to examine whether perfectionism relates to ideation by increasing pain, hopelessness, and/or disconnection.

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