Perfectionism, mattering, depressive symptoms, and suicide ideation in students: A test of the Perfectionism Social Disconnection Model.

Abstract

The Perfectionism Social Disconnection Model (PSDM) is a theory-driven model of the relationship between perfectionism, depressive symptoms, and suicide ideation. However, to date, tests of the PSDM have not included anti-mattering (i.e., feelings of not mattering alongside feelings of insignificance and marginalization) as a mediator or suicide ideation as an outcome. Critically, too, most research on the PSDM has relied on cross-sectional or two-wave longitudinal designs. Our study, then, examines whether perfectionism confers vulnerability to depressive symptoms and suicide ideation via mattering and anti-mattering in a three-wave longitudinal design. A sample of 181 undergraduates completed study measures on three occasions over six weeks. Findings provide strong support for the notion that socially prescribed perfectionism confers vulnerability to depressive symptoms via anti-mattering. Our findings suggest a need for future research on anti-mattering and suicide ideation, especially within the context of the PSDM and using longitudinal designs.

Keywords: perfectionism, mattering, depression, suicide, longitudinal.

Introduction

Mental health problems are highly prevalent among university students. Depressive symptoms and suicide ideation are particularly pervasive in the student-aged population with evidence suggesting these issues are increasing (e.g., Twenge et al., 2019). In the UK, for instance, the prevalence of common mental disorders, such as depressive symptoms in 16-24-year-olds are higher than ever before (McManus et al., 2016). Alarmingly, recent evidence also suggests that rates of suicides are increasing among university students (Gunnell et al., 2020). One reason for these trends in mental ill-health may be rising perfectionism (Curran & Hill, 2019). With this in mind, the current study examines the relationship between perfectionism, depressive symptoms and suicide ideation in undergraduates, and the mechanisms that may explain these relationships.

1.1 *Perfectionism, depressive symptoms, and suicide ideation*

Depressive symptoms include a lack of positive affect, feelings of worthlessness, insomnia or excessive sleeping, poor concentration, and somatic disturbances (American Psychological Association, 2019). Depressive symptoms signal the potential onset of a depressive disorder and are entwined with suicide ideation (Ribeiro et al., 2018). Suicide ideation involves thoughts, ideas and intents of suicide (Reynolds, 1991). The continuum linking suicide ideation to suicide completion is termed suicidality. The risk for completed suicide increases as an individual progresses from passive to more active thoughts about suicide (Joiner, 2005). Though the causes of depressive symptoms and suicide ideation are not fully understood, a combination of biological, social, cultural, and psychological factors play a role in its onset (e.g., Beck & Bredemeier, 2016; O'Connor & Nock, 2014). However, some personality traits such as perfectionism are considered predisposing factors for depressive symptoms and suicide ideation (Smith et al., 2016; 2018a).

Perfectionism is a personality characteristic which includes the setting of unrealistic standards and harsh self-criticism (Hewitt & Flett, 1991). Hewitt and Flett (1991) proposed one influential model of trait perfectionism which distinguishes between different targets of perfectionistic behaviour: self-oriented perfectionism (perfectionistic beliefs imposed onto the self), socially prescribed perfectionism (perfectionistic beliefs perceived to be imposed by others) and other-oriented perfectionism (imposing perfectionistic beliefs onto others). This model has been studied extensively with research finding support for differentiating between each dimension and their association with maladjustment (see Hewitt et al., 2017).

Several recent meta-analyses have summarised research examining perfectionism, depressive symptoms, and suicide ideation (e.g., Smith et al., 2016; 2018a). Both self-oriented and socially prescribed perfectionism are positively related to depressive symptoms and predict depressive symptoms over time, beyond baseline depression and neuroticism. However, socially prescribed perfectionism is the stronger and more consistent predictor (Smith et al., 2016). Like depressive symptoms, self-oriented and socially prescribed perfectionism are positively related to suicide ideation. However, again, socially prescribed perfectionism is the stronger predictor and, unlike self-oriented perfectionism, predicts longitudinal increases in suicide ideation (Smith et al., 2018).

1.2 *The Perfectionism Social Disconnection Model*

One promising model which explains *why* perfectionism leads to depressive symptoms and suicide ideation is the Perfectionism Social Disconnection Model (PSDM). According to the PSDM, socially prescribed perfectionism generates social disconnection via perceptions of others as critical, rejecting, and impossible to please which in turn, leads to depressive symptoms and suicide ideation (Hewitt et al., 2006). The PSDM has recently been expanded to include self-oriented perfectionism, other-oriented perfectionism, perfectionistic self-presentation and perfectionistic cognitions (Hewitt et al., 2017). In the expanded model,

self-oriented perfectionism is thought to generate social disconnection because of an extreme focus on accomplishment at the expense of forming meaningful interpersonal relationships (Sherry et al., 2016). Therefore, while playing a lesser role, self-oriented perfectionism is implicated in this model, nonetheless.

Research examining depressive symptoms in the PSDM has received strong empirical support. Research has found various markers of social disconnection to mediate the perfectionism-depressive symptoms relationship (e.g., loneliness; social self-esteem; Rnic et al., 2021; Smith et al., 2017). Smith et al. (2020) recently summarized research on the PSDM in a meta-analytic review of longitudinal studies examining the mediating role of social disconnection in the perfectionism-depressive symptoms relationship. The authors found that both perfectionistic strivings and perfectionistic concerns indirectly predicted depressive symptoms through social disconnection. In this regard, the PSDM appears useful in understanding how perfectionism contributes to depressive symptoms.

While the PSDM was initially developed to explain the perfectionism-suicidality link (Hewitt et al., 2006), to date, very few studies have investigated the perfectionism-suicidality relationship in the PSDM. In the first of two studies, Roxborough et al. (2012) found socially prescribed perfectionism and perfectionistic self-presentation to indirectly predict suicidal behaviour via social hopelessness and being bullied in child and adolescent outpatients. In a second study, Robinson et al. (2021) found socially prescribed perfectionism to indirectly predict suicide ideation via interpersonal hopelessness in adults with a history of suicide ideation. Accordingly, research examining *why* perfectionism leads to suicide ideation within the PSDM is lacking, particularly among nonclinical samples. With this in mind, the first purpose of this study is to provide a test of the PSDM that includes suicide ideation as an outcome.

1.3 *The mediating role of mattering and anti-mattering*

A second purpose of this study was to examine additional markers of social disconnection in the PSDM. One marker which has been examined is mattering (e.g., Cha, 2016; Flett et al., 2012). Mattering is defined as "the feeling that others depend on us, are interested in us, are concerned with our fate, or experience us as an ego-extension" (Rosenberg & McCullough, 1981, p.165). A sense of mattering is instrumental to protect against life stressors and setbacks (Flett et al., 2012). Accordingly, mattering has been found to mediate the relationship between perfectionism and depression cross-sectionally in the PSDM (Cha, 2016; Flett et al., 2012). Most notably, feelings of not mattering are linked robustly with loneliness and associated feelings of isolation (see Flett, 2018).

The current study revisits the association between perfectionism and mattering and extends research in two main respects. First, we examine perfectionism and mattering longitudinally, extending the outcome measures to also include suicide ideation. Second, we include assessments of mattering as well as explicit feelings of not mattering (i.e., anti-mattering). Flett (2018) suggests that feelings of not mattering, as well as feeling insignificant, invisible, and not heard are simply not the opposite of positive feelings of mattering. Here, the demoralization and personal sense of being treated unfairly that comes with this emphasis of not mattering ought to be particularly relevant to the PSDM alongside the psychological pain that contributes to suicidal thoughts.

Parenthetically, although the theme "You Matter" is central to suicide prevention programs (see Flett, 2018), research on mattering and suicidality is not very extensive, particularly among university students. While research demonstrates that mattering is indeed protective (e.g., Olcon et al., 2017), no research has longitudinally examined the mattering-suicidality relationship; moreover, research is yet to contrast mattering and anti-mattering in relation to suicidality or within the PSDM. Notably, while mattering is often discussed as overlapping considerably with interpersonal constructs (e.g., belongingness; Drabenstott,

2019), mattering is unique in that it focuses on feeling significant rather than simply feeling connected with others. Our emphasis here is on the distress and disconnection that comes from not feeling valued or cared about by others.

1.4 *Advancing methodological limitations*

A final overarching purpose of our study was to methodologically advance research on the PSDM. To date, most tests of the PSDM rely on cross-sectional designs (e.g., Flett et al., 2012). However, cross-sectional designs are limited as they cannot infer causality or provide proper tests of mediation (Cole & Maxwell, 2003). Longitudinal designs are required as they provide a temporal component, account for baseline levels of outcome variables and can include three time points required to test mediation. On this latter point, few longitudinal studies have examined the PSDM and most of these employ only two-waves of data (e.g., Rnic et al., 2021). Additionally, all longitudinal studies focus on depressive symptoms and have ignored suicide ideation, and none have included mattering or its conceptual opposite, anti-mattering, which is more destructive given its stronger relations with social disconnection and maladjustment. We address these issues by conducting a robust three-wave longitudinal design, controlling for baseline depressive symptoms and suicide ideation.

1.5 *The Present Study*

Our study tests a PSDM that includes suicide ideation and depressive symptoms as outcomes and anti-mattering and mattering as mediators. To do so, we employed a three-wave longitudinal design to provide a true test of mediation. We hypothesized that socially prescribed perfectionism would be indirectly related to depressive symptoms and suicide ideation via mattering and anti-mattering. Given inconsistent findings with self-oriented perfectionism (e.g., Smith et al., 2017), its inclusion was exploratory.

2. Method

2.1 *Participants and procedure*

Based on Fritz and Mackinnon (2007), sample sizes between 53 to 148 are required to detect an indirect effect of between .07 (HH; a = .26 and b = .26) to .23 (ML; a = .39 and b = .59) to achieve 0.8 power. Research examining the PSDM has reported indirect effects that range from <.010 to .12 (Cha, 2016; Flett et al., 2012; Sherry et al., 2008).

181 undergraduate students (48.10% female; M_{age} = 20.34 years, SD = 3.25) from the United Kingdom were recruited for the study. Participants were predominantly White British (70.2%) and were in their second (60.2%) or third year (39.8%) of university.

The study was approved by the university's research ethics committee. Participants provided informed consent and completed a paper-and-pen questionnaire at three timepoints. Of 181 participants, 150 (82.9%) completed Wave 2 and 109 (60.2%) completed Wave 3. The average time lag between Time 1 and Time 2 was 22.96 days (SD = 3.36) and between Time 2 and Time 3 was 23.08 days (SD = 4.91).

2.2 *Measures*

Perfectionism. Perfectionism was measured using a 15-item short-form of Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (HF-MPS-SF; Hewitt et al., 2008). This scale comprises three dimensions: self-oriented perfectionism (e.g., "I strive to be as perfect as can be"), socially prescribed perfectionism (e.g., "My family expects me to be perfect") and other-oriented perfectionism (e.g., "Everything that others do must be of top-notch quality"). Items were rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The HF-MPS-SF has high internal reliability ($\alpha \geq .84$; Smith et al., 2017). Subscales of the HF-MPS-SF are strongly correlated with subscales of the original scale (Hewitt et al., 2008).

Mattering. Mattering was measured using the five-item Rosenberg General Mattering Scale (GMS; e.g., "How important do you feel you are to other people?"; Rosenberg & McCullough, 1981). Participants rated items on a 4-point scale from 1 (*not at all*) to 4 (*a lot*).

Internal reliabilities are high (α = .81; Flett et al., 2012). The GMS negatively correlates with depression, anxiety, and delinquency, and positively correlates with self-esteem (Rosenberg & McCullough, 1981). Confirmatory factor analysis indicates that the items represent one factor (Rosenberg & McCullough, 1981).

Anti-mattering. Anti-mattering was measured using the five-item Anti-Mattering Scale (AMS; e.g., "How much do you feel like you don't matter?"; Flett et al., 2022). Participants rated items on a 4-point scale from 1 (*not at all*) to 4 (*a lot*). The AMS has high internal reliability (α = .90) and strong six-week test-retest reliability (*r*=.73 ; Etherson et al., 2022). The AMS is positively correlated with depression, social anxiety, and loneliness and negatively correlated with mattering and self-esteem (Flett et al., 2022).

Depressive Symptoms. Depressive symptoms were measured using the 10-item short-form of the Centre for Epidemiological Studies Depression Scale (CES-D-SF; e.g., "I felt my life had been a failure"; Cole et al., 2004). Items were rated on a 4-point scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). The CES-D-SF has high internal reliability (α = .82 to.88) and two-week test-retest reliability (*r* = .68; Smith et al., 2017) and is highly correlated with the Beck Depression Inventory (*r*=.74; Cole et al., 2004).

Suicide Ideation. Suicide ideation was measured using the 25-item Adult Suicide Ideation Questionnaire (ASIQ; e.g., "I thought about killing myself"; Reynolds, 1991). Items were rated on a 7-point scale from 0 (*never had this thought*) to 6 (*almost every day*). The ASIQ has high internal reliability (α = .87) and strong two-week test-retest reliability (*r*=.86; Chen et al., 2017). The ASIQ is moderately correlated with suicide attempts and strongly correlated with depression and hopelessness (Reynolds, 1991).

2.2 *Data Screening*

Only 0.11% to 0.35% was missing across waves. Little's MCAR test was non-significant, suggesting data was missing completely at random χ^2 (95) = 94.584, p = .493. We

excluded one participant with a Mahalanobis distance above the critical value χ^2 (21) = 46.797, $p < .001$ (Tabachnick & Fidell, 2007).

3. Results

3.1 *Descriptive statistics*

Descriptive statistics, scale reliabilities and correlations are in Table 1. Cronbach's alphas are high ($\alpha > .81$). Three-week and six-week test-retest reliabilities were strong ranging from .53 to .87.

3.2 *Path analysis*

Models were tested using path analysis with full information maximum likelihood estimation in Mplus Version 8.0. (Muthén & Muthén, 1998-2018). The significance of indirect effects was determined using bias-corrected bootstrapping with 20,000 resamples. Bias-corrected bootstrapping was used as a non-parametric alternative as indirect effects tend to have distributions skewed away from zero (Shrout & Bolger, 2002). If the 95% bias-corrected bootstrapped confidence interval for an indirect effect does not include zero within its upper and lower bounds, it infers mediation.

The indirect effect of self-oriented perfectionism on depressive symptoms via mattering (β = .00 [95% CI -.01, .04], *SE* = .01), and anti-mattering (β = -.03 [95% CI -.11, .02], *SE* = .03) was non-significant. Likewise, the indirect effect of self-oriented perfectionism on suicide ideation via mattering (β = -.01 [95% CI -.07, .01], *SE* = .02), and anti-mattering (β = .00 [95% CI -.02, .02], *SE* = .01) was non-significant.

The indirect of socially prescribed perfectionism on depressive symptoms via mattering was non-significant (β = -.00 [95% CI -.05, .01], *SE* = .01). However, the indirect effect of socially prescribed perfectionism on depressive symptoms via anti-mattering was significant (β = .07 [95% CI .01, .15], *SE* = .04). The indirect of socially prescribed

perfectionism on suicide ideation via mattering (β = .02 [95% CI -.01, .08], *SE* = .02) and anti-mattering (β = .00 [95% CI -.03, .03], *SE* = .02) was non-significant (see Figure 1).

4. Discussion

The purpose of our study was to provide a robust longitudinal test of the PSDM that included suicide ideation and depressive symptoms as outcomes and anti-mattering and mattering as mediators. We hypothesized that socially prescribed perfectionism would be indirectly related to depressive symptoms and suicide ideation via mattering and anti-mattering. Findings revealed that socially prescribed perfectionism indirectly predicted depressive symptoms over time, but not suicide ideation, via anti-mattering only. No relationships emerged with self-oriented perfectionism.

4.1 *Extending research on the PSDM*

The finding that socially prescribed perfectionism was indirectly related to depressive symptoms is in line with research on the PSDM (e.g., Smith et al., 2017). This pathway appears to be one of the most robust aspects of the PSDM. Here, this was the only indirect

Table 1

Descriptive statistics, scale reliabilities, and correlations.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Time 1																					
1. SOP	—																				
2. SPP	.50**	—																			
3. OOP	.54**	.49**	—																		
4. Mattering	-.12	-.20**	-.08	—																	
5. Anti-mattering	.15	.28**	.14	-.41**	—																
6. Depressive symptoms	.12	.27**	.10	-.48**	.69**	—															
7. Suicide Ideation	.08	.19*	.12	-.37**	.51**	.60**	—														
Time 2																					
8. SOP	**.65****	.34**	.44**	-.17	.10	.22*	.13	—													
9. SPP	.44**	**.67****	.42**	-.32**	.26**	.34**	.26**	.64**	—												
10. OOP	.40**	.31**	**.67****	.21*	.15	.20*	.24*	.60**	.67**	—											
11. Mattering	-.03	-.20*	-.09	**.84****	-.39**	-.46**	-.32**	-.11	-.31**	-.20*	—										
12. Anti-mattering	.10	.32**	.18	-.38**	**.65****	.58**	.46**	.14	.43**	.26**	-.44**	—									
13. Depressive symptoms	.15	.29**	.14	-.39**	.63**	**.67****	.45**	.20*	.40**	.22*	-.44**	.74**	—								
14. Suicide Ideation	.10	.11	-.08	-.43**	.53**	.62**	**.87****	.16	.24*	.20*	-.34**	.47**	.53**	—							
Time 3																					
15. SOP	**.67****	.50**	.60**	-.06	.20*	.10	.08	**.74****	.55**	.54**	-.05	.18	.14	.50	—						
16. SPP	.42**	**.64****	.46**	-.06	.23*	.15	.07	.45**	**.72****	.49**	-.17	.29**	.18	.08	.67**	—					
17. OOP	.33**	.27**	**.56****	.00	.04	-.00	.10	.42**	.36**	**.67****	-.14	.04	-.02	.08	.54**	.65**	—				
18. Mattering	.05	-.04	-.08	**.57****	-.22*	-.28**	-.11	-.06	-.13	-.15	**.60****	-.28*	-.22*	-.31**	-.05	-.07	.01	—			
19. Anti-mattering	-.00	.19	-.01	-.35**	**.64****	.62**	.47**	.11	.38**	.12	-.36**	**.73****	.62**	.49**	.07	.27**	.05	-.23*	—		
20. Depressive symptoms	-.00	.06	-.10	-.20*	.36**	**.52****	.41**	.10	.26*	.15	-.14	.49**	**.53****	.46**	.07	.19	.09	.00	.57**	—	
21. Suicide Ideation	-.05	-.09	-.11	-.35**	.36**	.53**	**.73****	.08	.15	.08	-.46**	.41**	.50**	**.87****	-.06	-.01	.03	-.22*	.54**	.44**	—
Mean (Item Level)	4.37	3.75	3.51	2.95	1.89	0.88	0.28	4.36	3.91	3.67	2.93	2.03	0.96	0.30	4.38	3.99	3.73	2.90	1.89	0.94	0.26
SD	1.20	1.20	1.20	.56	.63	.50	.52	1.27	1.29	1.31	.54	.80	.52	.51	1.33	1.22	1.28	.65	.69	.51	.39
Alpha reliabilities (α)	.89	.83	.82	.82	.81	.80	.97	.93	.87	.87	.82	.91	.82	.98	.94	.85	.87	.89	.90	.72	.96

Note. **SOP** = self-oriented perfectionism; **SPP** = socially prescribed perfectionism; **OOP** = other-oriented perfectionism.
Test-retest correlations appear in bold. Pairwise deletion. $^{*}p < .05$, $^{**}p < .01$.

Figure 1

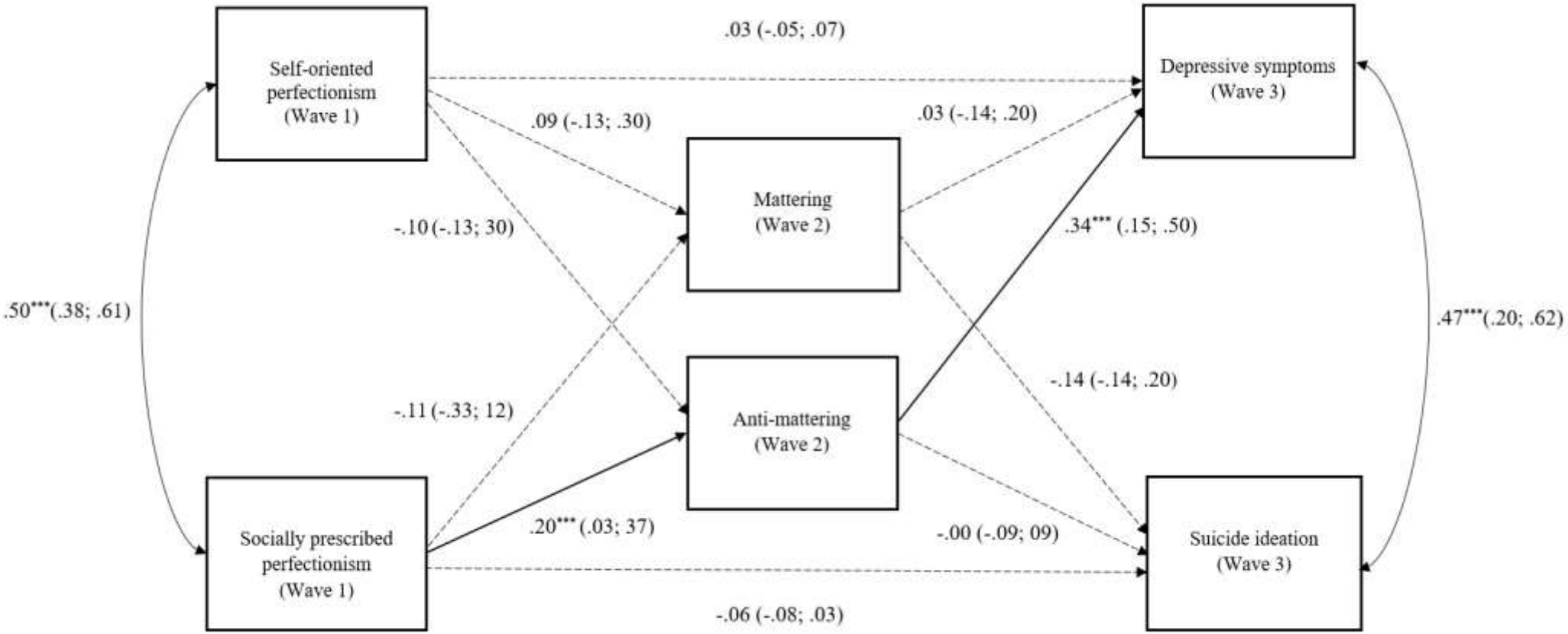

Figure 1. Path diagram depicting associations amongst variables. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3), the path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3), the path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3), and the path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was omitted from the figure for clarity. Likewise, correlations amongst

depressive symptoms (Wave 1) and suicide ideation (Wave 1), self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1), socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1), self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1), socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) and mattering (Wave 2) and anti-mattering (Wave 2) was omitted from the figure for clarity. The path from self-oriented perfectionism (Wave 1) to suicide ideation (Wave 3) was β = -.04 [95% CI -.16, .08]. The path from socially prescribed perfectionism (Wave 1) to depressive symptoms (Wave 3) was β = -.11 [95% CI -.28, .08]. The path from depressive symptoms (Wave 1) to depressive symptoms (Wave 3) was β = .47 [95% CI .29, .65]. The path from suicide ideation (Wave 1) to suicide ideation (Wave 3) was β = .82 [95% CI 63, .95]. The correlation amongst depressive symptoms (Wave 1) and suicide ideation (Wave 1) was .61. The correlation amongst self-oriented perfectionism (Wave 1) and depressive symptoms (Wave 1) was .13. The correlation amongst socially prescribed perfectionism (Wave 1) and depressive symptoms (Wave 1) was .28. The correlation amongst self-oriented perfectionism (Wave 1) and suicide ideation (Wave 1) was .11. The correlation amongst socially prescribed perfectionism (Wave 1) and suicide ideation (Wave 1) was .19. The correlation amongst mattering (Wave 2) and anti-mattering (Wave 2) was -.25. All estimates are standardized.

pathway to emerge in our model. Our study provides one of the most stringent tests of this relationship and confirmed that, over time, increases in perceptions that others are demanding and critical results in depressive symptoms (via social disconnection). As such, we reiterate the importance of this model in understanding the relationship between perfectionism and depressive symptoms and encourage others to adopt it when seeking to understand this relationship and intervene.

We found no evidence to support a similar indirect relationship for suicide ideation. While unexpected, prior studies have found perfectionism to predict suicide ideation longitudinally in clinical (e.g., Beevers & Miller, 2004), but not non-clinical samples (e.g., Enns et al., 2001). Therefore, the PSDM may be more adept at explaining these relationships in clinical groups. Our design also had a relatively short time frame (spanning six weeks). It is possible that the elapsed time was not long enough to observe changes in suicide ideation. A related issue here is the high rank-order stability of suicide ideation which was notably higher than depressive symptoms and left little variance to be explained. Finally, socially prescribed perfectionism may predict suicide ideation via other markers of social disconnection (e.g., interpersonal hopelessness; Robinson et al., 2021). Given the robust relationship between perfectionism and suicide ideation in previous research (Smith et al., 2018), future research should test these possibilities.

We extended tests of the PSDM by including anti-mattering, alongside mattering as markers of social disconnection. Based on the findings, anti-mattering emerges as an important addition to previously examined markers. Notably, following the inclusion of anti-mattering, mattering was rendered non-significant with no indirect effects evident. Though research has found mattering to be a mediator in the PSDM (e.g., Flett et al., 2012), it appears its role is subsumed by feelings of anti-mattering which comprise more insidious and destructive feelings of being insignificant and marginalised. Moreover, anti-mattering,

relative to mattering, consistently revealed stronger links with suicide ideation. As such, anti-mattering may be a better proxy than mattering and the most pertinent of the two when seeking to test the PSDM in future research.

We included self-oriented perfectionism in response to suggestions that this dimension may play a role in the PSDM (e.g., Sherry et al., 2016). However, in this study, self-oriented perfectionism did not indirectly predict depressive symptoms or suicide ideation via mattering and anti-mattering. On one hand, several studies have found no association between self-oriented perfectionism and social disconnection (e.g., mattering; Flett et al., 2012). On the other hand, theory suggests self-oriented perfectionism is rooted in impoverished interpersonal needs (Hewitt et al., 2017). Likewise, a recent meta-analysis by Smith et al. (2020) found perfectionistic strivings to indirectly predict depressive symptoms via social disconnection. In weighing this evidence, it may be that self-oriented perfectionism is only related to certain markers of social disconnection (e.g., loneliness; Rnic et al., 2021). Accordingly, it is likely that the key issue is which markers of social disconnection are included. Establishing the role of self-oriented perfectionism and key markers of social disconnection associated with this dimension in the PSDM is a priority for future research.

4.2 Limitations and future directions

Our study has limitations. First, we employed self-report measures, which are potentially biased. Future research should employ multi-source designs (e.g., informant reports). Second, we tested a specific sequence of relationships based on theory and research (e.g., Hewitt et al., 2017). However, different sequences are possible. For instance, greater depressive symptoms and suicide ideation may generate heightened social disconnection or perfectionistic behaviours (e.g., Etherson et al., 2022). Future research should examine complication/ scar or reciprocal effects to fully understand the directionality of these relationships. Third, our study examined trait dimensions of perfectionism in the PSDM. In

line with the expanded PSDM, future research should examine interpersonal, public manifestations of perfectionism, such as perfectionistic self-presentation (Hewitt et al., 2017). Fourth, our sample exhibited low mean levels of depressive symptoms and suicide ideation, which is likely to have suppressed variability. Future research should examine the study relationships in a clinical sample reporting greater depressive symptoms and suicide ideation. Lastly, our sample consisted of undergraduates who were predominantly White British. Thus, research examining differences in age and ethnicity are necessary to establish generalizability.

4.3 Conclusion

Our study examines relationships between perfectionism, depressive symptoms, and suicide ideation via mattering and anti-mattering in the PSDM. We provide strong support for the notion socially prescribed perfectionism confers vulnerability to depressive symptoms via anti-mattering. Here, we advocate for the inclusion of anti-mattering in the PSDM and the use of robust longitudinal designs to examine the PSDM.

References

American Psychiatric Association. (2019). *Diagnostic and statistical manual of mental disorders: Fifth Edition, Text Revision (DSM-IV-TR).* American Psychological Association.

Beck, A. T., & Bredemeier, K. (2016). A unified model of depression: Integrating clinical, cognitive, biological, and evolutionary perspectives. *Clinical Psychological Science, 4*, 596-619. https://doi.org/10.1177/2167702616628523

Beevers, C. G., & Miller, I. W. (2004). Perfectionism, cognitive bias, and hopelessness as prospective predictors of suicidal ideation. *Suicide and Life-Threatening Behavior*, *34*, 126-137. https://doi.org/10.1521/suli.34.2.126.32791

Cha, M. (2016). The mediation effect of mattering and self-esteem in the relationship between socially prescribed perfectionism and depression: Based on the social disconnection model. *Personality and Individual Differences, 88*, 148-159. https://doi.org/10.1016/j.paid.2015.09.008

Chen, C., Hewitt, P. L., & Flett, G. L. (2017). Ethnic variations in other-oriented perfectionism's associations with depression and suicide behaviour. *Personality and Individual Differences*, *104*, 504-509. https://doi.org/10.1016/j.paid.2016.09.021

Cole, D.A., & Maxwell, S.E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558–577. https://doi.org/10.1037/0021-843X.112.4.558

Cole, J. C., Rabin, A. S., Smith, T. L., & Kaufman, A. S. (2004). Development and validation of a Rasch-derived CES-D short form. *Psychological Assessment, 16*, 360–372. https://doi.org/10.1037/1040-3590.16.4.360

Curran, T. & Hill, A. P. (2019). Perfectionism is increasing over time: A meta-analysis

of birth cohort differences from 1989 to 2016. *Psychological Bulletin, 145,* 410-429. https://doi.org/10.1037/bul0000138

Drabenstott, M. (2019). A matter of life and death: Integrating mattering into the interpersonal psychological theory of suicide. *Suicide and Life-Threatening Behavior, 49,* 1006-1018. https://doi.org/10.1111/sltb.12504.

Enns, M. W., Cox, B. J., Sareen, J., & Freeman, P. (2001). Adaptive and maladaptive perfectionism in medical students: A longitudinal investigation. *Medical Education, 35,* 1034-1042. https://doi.org/10.1111/j.1365-2923.2001.01044.x

Etherson, M. E., Smith, M. M., Hill, A. P., & Flett, G. L. (2022). Feelings of not mattering and depressive symptoms from a temporal perspective: A comparison of the cross-lagged panel model and random-intercept cross-lagged panel model. *Journal of Psychoeducational Assessment, 40,* 60-76. https://doi.org/10.1177/07342829211049686

Flett, G. L. (2018). *The psychology of mattering: Understanding the human need to be significant.* Elsevier.

Flett, G. L., Galfi-Pechenkov, I., Molnar, D. S., Hewitt, P. L., & Goldstein, A. L. (2012). Perfectionism, mattering, and depression: A meditational analysis. *Personality and Individual Differences, 52,* 828-832. https://doi.org/10.1016/j.paid.2011.12.041.

Flett, G. L., Nepon, T., Goldberg, J. O., Rose, A. L., Atkey, S. K., & Zaki-Azat, J. (2022). The Anti-Mattering Scale: Development, psychometric properties and associations with well-being and distress measures in adolescents and emerging adults. *Journal of Psychoeducational Assessment, 40,* 37-59. https://doi.org/10.1177/07342829211050544

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18,* 233-239.

https://doi.org/10.1111/j.1467-9280.2007.01882.x

Gunnell, D., Caul, S., Appleby, L., John, A., & Hawton, K. (2020). The incidence of suicide in university students in England and Wales 2000/2001–2016/2017: Record linkage study. *Journal of Affective Disorders, 261*, 113-120. https://doi.org/10.1016/j.jad.2019.09.079

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. https://doi.org/10.1037/0022-3514.60.3.456

Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: A relational approach to conceptualization, assessment, and treatment*. The Guilford Press.

Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. (2006). Trait perfectionism dimensions and suicidal behavior. In T. E. Ellis (Eds.), *Cognition and Suicide: Theory, Research, and Therapy* (pp. 215-235). American Psychological Association.

Hewitt, P. L., Habke, A. M. Lee–Baggley, D. L., Sherry, S. B., & Flett, G. L. (2008). The impact of perfectionistic self-presentation on the cognitive, affective, and physiological experience of a clinical interview. *Psychiatry, 71,* 93-122. https://doi.org/10.1521/psyc.2008.71.2.93

Joiner, T. E. (2005). Why people die by suicide. Harvard University Press.

McManus, S., Bebbington, P., Jenkins, R., Brugha, T. (eds.) (2016). Mental Health and Wellbeing in England Adult Psychiatric Morbidity Survey. NHS Digital.

O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *Lancet Psychiatry, 1,* 73-85. https://doi.org/10.1016/S2215-0366(14)70222-6

Olcon, K., Kim, Y., & Gulbas, L. E. (2017). Sense of belonging and youth suicidal behaviors: What do communities and schools have to do with it? *Social work in Public Health,*

32, 432-442. https://doi.org/10.1080/19371918.2017.1344602

Reynolds, W. M. (1991). Psychometric characteristics of the Adult Suicidal Ideation Questionnaire in college students. *Journal of Personality Assessment, 56,* 289-307. https://doi.org/10.1207/s15327752jpa5602_9

Rosenberg, M., & McCullough, B. C. (1981). Mattering: Inferred significance and mental health among adolescents. *Research in Community and Mental Health, 2,* 163–182.

Robinson, A., Moscardini, E., Tucker, R., & Calamia, M. (2021). Perfectionistic self-presentation, socially prescribed perfectionism, self-oriented perfectionism, interpersonal hopelessness, and suicidal ideation in US Adults: Re-examining the Social Disconnection Model. *Archives of Suicide Research,* 1-15. https://doi.org/10.1080/13811118.2021.1922108

Roxborough, H. M., Hewitt, P. L., Kaldas, J., Flett, G. L., Caelian, C. M., Sherry, S. B., & Sherry, D. L. (2012). Perfectionistic self-presentation, socially prescribed perfectionism, and suicide in youth: A test of the Perfectionism Social Disconnection Model. *Suicide and Life-Threatening Behavior, 42,* 217-233. https://doi.org/10.1111/j.1943-278X.2012.00084.x

Rnic, K., Hewitt, P. L., Chen, C., Flett, G. L., Jopling, E., & LeMoult, J. (2021). Examining the link between multidimensional perfectionism and depression: A longitudinal study of the intervening effects of social disconnection. *Journal of Social and Clinical Psychology, 40,* 277-303. https://doi.org/10.1521/jscp.2021.40.4.277

Sherry, S. B., Law, A., Hewitt, P. L., Flett, G. L., & Besser, A. (2008). Social support as a mediator of the relationship between perfectionism and depression: A preliminary test of the social disconnection model. *Personality and Individual Differences, 45,* 339-344. https://doi.org/10.1016/j.paid.2008.05.001

Sherry, S. B., Mackinnon, S. P., & Gautreau, C. M. (2016). Perfectionists don't play nicely

with others: Expanding the social disconnection model. In F. M. Sirois & D. Molnar (Eds.), *Perfectionism, health, and well-being* (pp. 225-243). Springer.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*, 422–445. https://doi.org/10.1037/1082-989X.7.4.422

Smith, M. M., Sherry, S. B., Chen, S., Saklofske, D. H., Mushquash, C., Flett, G. L., & Hewitt, P. L. (2018a). The perniciousness of perfectionism: A meta-analytic review of the perfectionism-suicide relationship. *Journal of Personality*, *86*, 522-542. https://doi.org/10.1111/jopy.12333

Smith, M. M., Sherry, S. B., Mushquash, A. R., Saklofske, D. H., Gautreau, C. M., & Nealis, L. J. (2017). Perfectionism erodes social self-esteem and generates depressive symptoms: Studying mother-daughter dyads using a daily diary design with longitudinal follow-up. *Journal of Research in Personality, 71*, 72-79. https://doi.org/10.1016/j.jrp.2017.10.001

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M. W., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality, 30*, 201-212. https://doi.org/10.1002/per.2053

Smith, M. M., Sherry, S. B., Vidovic, V., Flett, G. L., & Hewitt, P. L. (2020). Why does perfectionism confer risk for depressive symptoms? A meta-analytic test of the mediating role of stress and social disconnection. *Journal of Research in Personality, 86*, 103954. https://doi.org/10.1016/j.jrp.2020.103954

Tabachnick, B. G., & Fidell, L.S. (2007). Using multivariate statistics (5th ed.). Pearson.

Twenge, J. M., Cooper, A. B., Joiner, T. E., Duffy, M. E., & Binau, S. G. (2019). Age,

period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017. *Journal of Abnormal Psychology*, *128*,185-199. https://doi.org/10.1037/abn0000410