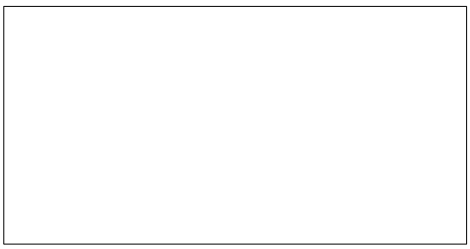

Smith, M. M., Sherry, S. B., Hewitt, P. L., Flett, G. L., Hall, P. A., & Lee-Baggley, D. L. (accepted). The existential model of perfectionism and depressive symptoms: Testing a moderated mediation model in community adults using one-month two-wave longitudinal designs. *Personality and Individual Differences.*

The Existential Model of Perfectionism and Depressive Symptoms: Testing a Moderated Mediation Model in Community Adults Using a One-Month Two-Wave Longitudinal Design

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—5,000 Words—

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Abstract

The existential model of perfectionism and depressive symptoms (EMPDS) posits difficulties accepting the past (i.e., viewing past experiences as incoherent, dissatisfying, and meaningless) explains when and why socially prescribed perfectionism (i.e., perceiving others as requiring perfection of the self) confers risk for depressive symptoms. However, excessive use of cross-sectional designs, an over-reliance on undergraduate samples, and a lack of research testing moderated mediation have limited understanding of the EMPDS. We addressed these limitations by conducting the first longitudinal moderated mediation test of the EMPDS in community adults (N = 265). Congruent with the EMPDS, results revealed socially prescribed perfectionism indirectly predicted increased depressive symptoms one-month later through difficulties accepting the past and that socially prescribed perfectionism moderated this indirect effect. Overall, findings lend credence and coherence to the EMPDS and suggest that socially prescribed perfectionism both generates difficulties accepting the past and intensifies the influence that these difficulties have on depressive symptoms.

Keywords: perfectionism; depression; longitudinal; existential

1. Introduction

Depression is a common mental health problem that manifests in a range of symptoms including guilt, sadness, anhedonia, suicidal thinking, somatic disturbances, and a lack of self-care and is taxing at both the individual and societal level (American Psychological Association, 2013; Lépine & Briley, 2011). Moreover, the prevalence of depression is so high the World Health Organization Burden of Disease Study ranked it as the most burdensome disease for middle-aged adults (Murray & Lopez, 1996). Alternatively, in the United States, the salary-equivalent cost of depression exceeds $36 billion annually (Kessler et al., 2006).

Depression is commonly understood to stem from an interplay of environmental, biological, and surface-level cognitive factors. Though not wrong, this explanation is incomplete as it negates a quintessential human ability that may differentiate us from all other animals. Namely, we have an existential theory of mind that allows us to not only explain and predict behavior but to assign meaning to autobiographical experiences (see Bering, 2002, for review). And people who learn to develop representations of their past experiences as acceptable can reminisce about them without suffering excessive negative feelings, which allows them to respond to and recover from the inevitable challenges of life successfully (Frankl, 1984; Maddii, 1967, Yalom, 1980). However, some people have elevated levels of personality traits that predispose a view of past experiences as dissatisfying, incoherent, and unacceptable—a view that is depressogenic (Yalom, 1980). The present study examined one such personality trait, perfectionism, through the lens of the existential model of perfectionism and depressive symptoms (EMPDS; Graham et al., 2010).

According to the EMPDS, people high in socially prescribed perfectionism live their lives at the whims of others, making it difficult for them to consolidate life experiences into a personally meaningful story, which, in turn, leads to depressive symptoms (Sherry, Sherry, Hewitt, Mushquash & Flett, 2015). Yet, though evidence is supportive of the EMPDS

(Graham et al., 2010; Sherry et al., 2015; Smith, Sherry, Ray, Lee-Baggley, Hewitt, & Flett, in press), an excessive use of cross-sectional designs, an over-reliance on undergraduate samples, and the tendency for researchers to test mediation or moderation, but rarely moderated mediation, have limited validation of the EMPDS. Our study addressed these limitations by examining the EMPDS via moderated mediation using a one-month, two-wave longitudinal design in community adults.

1.1. Conceptualizing perfectionism

Hewitt, Flett, and Mikail (2017) conceptualize perfectionism as having three components: trait perfectionism (Hewitt & Flett, 1991), perfectionistic cognitions (Flett et al., 1998), and perfectionistic self-presentation (Hewitt et al., 2003). Trait perfectionism characterizes deeply ingrained beliefs that perfecting the self or others is essential and, according to Hewitt et al. (2017), arises from unmet relational needs in early childhood. Likewise, trait perfectionism is composed of self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism (Hewitt & Flett, 1991). Self-oriented perfectionism refers to the requirement of perfection of the self; other-oriented perfectionism refers to the need for perfection from others; and socially prescribed perfectionism refers to perceptions that other people require perfection (Hewitt & Flett, 1991).

Theoretical accounts, case histories, and decades of sustained research have supported trait perfectionism as a clinically relevant variable that acts as a vulnerability factor for the onset and maintenance of mental health problems, such as depressive symptoms (Hewitt et al., 2017; Hewitt, Smith, Deng, Chen, Flett, & Patterson, 2019; Limburg et al., 2017; Smith et al., 2016). Nonetheless, socially prescribed perfectionism is the trait perfectionism dimension most robustly tied to difficulties accepting the past and, as such, is the focus of our study (Sherry et al., 2015; Smith et al., in press).

1.2. Advancing research on the EMPDS

The EMPDS contends that viewing past experiences as unacceptable is germane to socially prescribed perfectionism and that difficulties accepting the past are crucial for understanding why socially prescribed perfectionism displays consistent positive associations with depressive symptoms (Sherry et al., 2015). In support, Graham et al. (2010) reported perfectionistic concerns, a latent variable composed of socially prescribed perfectionism and related indicators, predicted increased depressive symptoms one-month later through difficulties accepting the past in undergraduates. Likewise, Sherry et al. (2015) found that a lack of past acceptance mediated the relationship between socially prescribed perfectionism and depressive symptoms and that this mediation effect was conditional on socially prescribed perfectionism. More recently, Smith et al. (in press) demonstrated that difficulties accepting the past mediated the socially prescribed perfectionism-depressive symptoms link in depressed individuals. However, methodological improvements are needed to advance understanding of the EMPDS.

Except for Graham et al. (2010), research testing the EMPDS has used cross-sectional designs, which are incapable of determining whether socially prescribed perfectionism and difficulties accepting the past explain changes in depressive symptoms (Sherry et al., 2015; Smith et al., in press). Likewise, socially prescribed perfectionism overlaps substantially with depressive symptoms (Smith et al., 2016), and controlling for this overlap is important as it allows researchers to determine the extent to which socially prescribed perfectionism adds to the prediction of depressive symptoms beyond depressive symptoms' self-propagating effect.

Most research on the EMPDS also uses university-aged samples (cf. Smith et al., in press). Participants in Graham et al. (2010) averaged 20.0 years of age; participants in Sherry et al. (2015) averaged 19.4 years of age. As such, our understanding of the generalizability of the EMPDS to older individuals is uncertain. Moreover, research investigating the relationship between socially prescribed perfectionism and depressive symptoms often tests

mediation or moderation, but seldom moderated mediation. Tests of mediation explain why socially prescribed perfectionism confers risk for depressive symptoms (e.g., social hopelessness; Smith et al., 2018). Tests of moderation clarify when socially prescribed perfectionism is related to depressive symptoms (e.g., when an ego-involving stressor is present; Flett, Blankstein, & Mosher, 1995). And tests of moderated mediation explain when a mediational effect is conditional on a moderator and whether an intervening variable is best conceptualized as a mediator, a moderator, or both (Preacher, Rucker, & Hayes, 2007). Given the evidence for both moderation and mediation, tests of moderated mediation are likely more suitable for capturing the processes posited by the EMPDS. However, Sherry et al. (2015) is the only study using moderated mediation to test the EMPDS, and whether these authors' cross-sectional findings replicate after taking variance attributable to baseline depressive symptoms into account is unclear.

1.3. The present study

Against this background, we evaluated the EMPDS by testing moderated mediation in community adults using a one-month, two-wave longitudinal design. Our model posits that socially prescribed perfectionism indirectly predicts increased depressive symptoms through difficulties accepting the past and that socially prescribed perfectionism intensifies the impact that these difficulties have on depressive symptoms (Figure 1). Given prior findings, we hypothesized the relationship between baseline socially prescribed perfectionism and follow-up depressive symptoms, controlling for baseline depressive symptoms, is mediated by difficulties accepting the past (Graham et al., 2010; Smith et al., in press). Additionally, building on prior research, we hypothesized the indirect effect of socially prescribed perfectionism on change in depressive symptoms through difficulties accepting the past is conditional on levels of socially prescribed perfectionism (Sherry et al. 2015).

2. Method

2.1. Participants

In total, 265 (177 women) community adults completed measures at baseline and follow-up. The average time lag between baseline and follow-up was 28.6 days (*SD* = 2.3; range: 19 to 37). The mean age of participants was 45.5 years of age (*SD* = 13.2; range: 22 to 86), and most were Caucasian (80.8%). Overall, 54.3% of participants were employed full-time, 18.1% were employed part-time, 11.3% were retired, 5.7% were homemakers, 2.3% were students, 1.5% were unemployed, and 3.8% reported 'other' (e.g., on disability). Lastly, 65.3% of participants were married, 12.4% were separated or divorced, 12.1% were single, 6.0% were cohabiting, 3.0% were widowed, and 1.1% did not specify.

2.2. Measures

2.2.1. Socially prescribed perfectionism

We measured socially prescribed perfectionism at baseline using the 5-item short-form socially prescribed perfectionism subscale of Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (MPS-SF; e.g., "The better I do, the better I am expected to do;" Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). The MPS-SF uses a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The reliability and validity of the MPS-SF are well established (Hewitt et al., 2008; Stoeber, 2016). Hewitt et al. (2008) reported the 5-item socially prescribed perfectionism subscale of the MPS-SF correlated .90 with the original 15-item subscale. Smith et al. (in press) reported the socially prescribed perfectionism subscale of the MPS-SF had a Cronbach's alpha of .84.

2.2.2. Depressive symptoms

We assessed depressive symptoms at baseline and one-month follow-up using Radloff's (1977) 21-item Center for Epidemiological Studies Scale (CESD; e.g., "I felt depressed"). The CESD uses a 4-point scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Ample evidence supports the reliability and validity of the CESD in non-

clinical samples (for reviews see Cosco, Prina, Stubbs, & Wu, 2017; Vilagut, Forero, Barbagliam, & Alonso, 2016).

2.2.3. Difficulties accepting the past

We measured difficulties accepting the past at one-month follow-up using Santor and Zuroff's (1994) 16-item Accepting the Past Scale (ATPS; e.g., "All in all, I feel comfortable with the choices I have made in the past"). The ATPS uses a 5-point scale from 1 (*disagree strongly*) to 5 (*agree strongly*). To facilitate interpretation, we reversed scores on ATPS, such that higher scores indicate greater difficulties accepting the past. Evidence is supportive of the ATPS's reliability and validity (Graham et al., 2010; Smith et al., in press). Research suggests the ATPS had acceptable convergent validity with existing measures of ego-integrity (Santor & Zuroff, 1994) and high internal consistency ($\alpha = .92$; Smith et al., in press).

2.3. Procedure

XXX University's research ethics board approved our study. Participants were parents of students attending university and were recruited through ads posted in the Department of Psychology's participant pool. Participants completed measures of socially prescribed perfectionism at baseline, difficulties accepting the past at follow-up, and depressive symptoms at baseline and one-month follow-up.

2.4. Data analytic strategy

We conducted path analysis with full-information maximum likelihood estimation in Mplus version 7.2 (Muthén & Muthén, 2012) to test (a) the extent to which difficulties accepting the past mediates the relationship between socially prescribed perfectionism and depressive symptoms at one-month follow-up (controlling for baseline depressive symptoms) and (b) the extent to which this mediation is conditional on levels of socially prescribed perfectionism. In doing so, we followed Preacher et al.'s (2007) guidelines for moderated

mediation, and we used the following statistics to gauge model fit: chi-square (χ_2), the comparative fit index (CFI), the Tucker-Lewis fit index (TLI), and the root-mean-square error of approximation (RMSEA). If χ_2 is significant ($p < .05$) it suggests a significant loss of fit relative to the just-identified model (i.e., $df = 0$). Values of CFI and TLI above .95 suggest good model fit (Kline, 2005). The RMSEA is an indicator of the level of misfit per degrees of freedom, with values of .08 or below being acceptable (Kline, 2005). Significance was evaluated using bias-corrected bootstrapping with 20,000 re-samples. If the 95% confidence interval for an indirect effect does not contain zero within it's upper and lower bounds, it suggests mediation (Shrout and Bolger, 2002). Socially prescribed perfectionism and difficulties accepting the past were standardized before creating the interaction term to reduce potential issues of multicollinearity. Simple slopes were computed using matrix algebra. We interpret effect sizes using Cohen's (1992) guidelines for small, medium, and large effects (r = .10, .30, .50).

3. Results

3.1. Descriptive statistics

Cronbach's alpha, bivariate correlations, and descriptive statistics are in Table 1. Cronbach's alpha was acceptable for all measures (α = .88 to .93). Baseline socially prescribed perfectionism had moderate positive relationships with difficulties accepting the past at follow-up (r = .34), as well as baseline and follow-up depressive symptoms (r = .36 to .40). Likewise, difficulties accepting the past had a large positive relationship with follow-up depressive symptoms (r = .61). In contrast, gender and age were not related to any variables of interest (r = –.08 to .09). As such, age and gender were not included as covariates for our moderated mediation test. The proportion of data missing across baseline and follow-up was 0%, thereby satisfying the assumptions of full information maximum likelihood estimation.

3.2. Moderated mediation

Our moderated mediation model is in Figure 1 and had acceptable fit: $\chi_2(1) = 0.77$, $p = .381$, RMSEA = 0.00 [90% CI; .00; .16], CFI = 1.00, TLI = 1.00. As hypothesized, the indirect effect of socially prescribed perfectionism on depressive symptoms at one-month follow-up (controlling for baseline depressive symptoms) through difficulties accepting the past was significant: β = .03 (95% CI: .004; .057), SE = .01. Likewise, as hypothesized, the effect of difficulties accepting the past on depressive symptoms was moderated by socially prescribed perfectionism: β = .12 (95% CI: .03; .20).[1]

The simple slope plot is in Figure 2. When socially prescribed perfectionism was one standard deviation below the mean, difficulties accepting the past was not related to change in depressive symptoms: β =.09 (95% CI: –.02; .20). Conversely, when socially prescribed perfectionism was at the mean, difficulties accepting the past predicted a small positive increase in depressive symptoms: β = .19 (95% CI: .10; .29). And when socially prescribed perfectionism was one standard deviation above the mean, difficulties accepting the past predicted a moderate positive increase in depressive symptoms: β =.30 (95% CI: .16; .43). Results suggest socially prescribed perfectionism leads to increased depressive symptoms due to a positive relationship with difficulties accepting the past and that the magnitude of the relationship between difficulties accepting the past and depressive symptoms at one-month follow-up, after controlling for baseline depressive symptoms, is more pronounced at higher levels of socially prescribed perfectionism.

4. Discussion

[1]To increase confidence in findings we tested the identical model but with difficulty accepting the past at baseline in place of difficulty accepting the past at follow-up. Model fit was acceptable: $\chi_2(1) = 1.43$, $p = .232$, RMSEA = 0.04 [90% CI; .00; .17], CFI = 1.00, TLI = .99. The indirect effect of socially prescribed perfectionism on depressive symptoms at one-month follow-up (controlling for baseline depressive symptoms) though baseline difficulty accepting the past was significant: β = .02 (95% CI: .005; .050), SE = .01. Likewise, the effect of baseline difficulty accepting the past on depressive symptoms at follow-up (controlling for baseline depressive symptoms) was moderated by socially prescribed perfectionism: β = .12 (95% CI: .03; .20).

The EMPDS asserts people high in socially prescribed perfectionism are predisposed to repetitive thoughts and feelings about their past experiences as unacceptable and that this lack of past acceptance gives rise to symptoms of depression (Smith et al., in press). Some initial work has validated the EMPDS; however, there is still much to learn. First, evidence in support of the EMPDS derives primarily from cross-sectional designs (Sherry et al., 2015; Smith et al., in press) which are incapable of testing whether socially prescribed perfectionism and difficulties accepting the past explain changes in, rather than the occurrence of, depressive symptoms. Second, with the exception of Smith et al. (in press), research on the EMPDS uses university-aged samples and understanding of the generalizability of the EMPDS to older samples is limited. Third, researchers typically use moderation to explain *when* socially prescribed perfectionism predicts depressive symptoms (e.g., Flett et al., 1995) and use mediation to explain *why* socially prescribed perfectionism predicts depressive symptoms (e.g., Smith et al., in press) but rarely provide a rationale as to why an intervening variable is a mediator or a moderator. We addressed these limitations by studying a sample of community adults and rigorously testing the EMPDS using a one-month, two-wave longitudinal design. As hypothesized, and congruent with Sherry et al. (2015), socially prescribed perfectionism indirectly predicted increased depressive symptoms through difficulties accepting the past, and this mediation effect was conditional on levels of socially prescribed perfectionism.

4.1. An improved understanding of the EMPDS

Developing a self-identity is an ongoing task occurring throughout the lifespan wherein people need to create and consolidate a positive identity, including representations of past experiences as satisfying and meaningful. However, people with high socially prescribed perfectionism often struggle with this task. Consistent with prior findings (Graham et al., 2010; Sherry et al., 2015; Smith et al., in press), we found that self-critical, repetitive, and

distressing thoughts about past experiences are a prototypic form of cognition for people high in socially prescribed perfectionism. One explanation is that by perpetually striving to please others, people high in socially prescribed perfectionism sacrifice their preferences and desires, which over time may lead to subjective and objective perceptions of their past as meaningless, inauthentic, incoherent, dissatisfying and unacceptable (Hewitt et al., 2017).

Consistent with Graham et al. (2010), we also found that viewing past experiences as unacceptable does not empower people to strive to obtain more satisfying experiences; instead, it may indeed foster depressive symptoms. This result aligns with a broader literature suggesting people who are unable to find or negotiate a sense of meaning or purpose in their life are at risk for mental health difficulties (Frankl, 1984; Maddi, 1967; Yalom, 1980). Additionally, findings aligned with decades of evidence showing socially prescribed perfectionism confers risk for depressive symptoms (see Smith et al., 2016 for review) and adds to this literature by providing novel insights into when and why socially prescribed perfectionism places people at risk for depression.

Namely, the current study is the first to demonstrate socially prescribed perfectionism indirectly predicts increased depressive symptoms through difficulties accepting the past. Moreover, our study presents compelling evidence that this mediational effect is conditional on socially prescribed perfectionism and that the magnitude of the relationship between difficulties accepting the past and depressive symptoms is stronger at higher levels of socially prescribed perfectionism. Accordingly, the harsh self-scrutiny, unrealistic expectations, and interpersonal sensitivity characteristic of people high in socially prescribed perfectionism appear to generate difficulties accepting the past, while simultaneously intensifying the impact of these difficulties on symptoms of depression.

4.2. Clinical implications

Hewitt et al. (2015) presented compelling evidence that dynamic-relational group

psychotherapy—containing an integrated psychodynamic and interpersonal approach—yielded clinically significant improvements in socially prescribed perfectionism, acceptance of the self in the past, and depressive symptoms at post-treatment and four months follow-up. Moreover, Hewitt et al. (in press) demonstrated that Hewitt et al.'s (2015) findings replicate when informant reports of change are used in place of patients' self-reports. In contrast, cognitive-behavioral treatments focusing on surface-level cognitions (e.g., Riley, Lee, Cooper, Fairburn, & Shafran, 2007) and symptoms (e.g., Hewitt et al., 2019) may be ill-suited for depressed patients high in socially prescribed perfectionism as they fail to address the patient's view of their past experiences as inauthentic, incoherent, and unacceptable. In contrast, dynamic-relational therapy requires patients to explicate and examine past experiences over the course of treatment, which may allow patients high in socially prescribed perfectionism to develop a more forgiving attitude towards their past, and in turn, obtain longer-lasting reductions in depressive symptoms (Hewitt et al., 2017; Yalom, 1980).

4.3. Limitations and future directions

Our study examined a moderated mediation model using two time-points. However, moderated mediation is optimally tested using three or more time points (Cole & Maxwell, 2003). Furthermore, we controlled for baseline depressive symptoms, but not baseline difficulty accepting the past. Future research should address this by measuring predictors, mediators, and the outcome at different time points and examining if changes in difficulties accepting the past, rather than the occurrence of difficulty accepting the past, mediates the relationship between socially prescribed perfectionism and depressive symptoms. Also, most participants (92.5%) fell short of the CES-D cut-off of 20.0 for depression (Vilagut et al., 2016), and participants were not screened for depressive disorders. As such, researchers could substantially advance understanding of the clinical relevance of EMPDS by testing the EMPDS in a clinical population. Future research would also benefit from a more finely

grained analysis of perfectionism that includes self-oriented and other-oriented perfectionism, alongside perfectionistic self-presentation (Hewitt et al., 2003) and perfectionistic cognitions (Flett et al., 1998). Lastly, researchers should test the extent to which our findings extend beyond depressive symptoms to other forms of distress consistently tied to socially prescribed perfectionism, such as suicide (Smith et al., 2018a). For instance, socially prescribed perfectionism indirectly predicts suicidal behaviors through a negative association with reasons for living (Dean & Range, 1996). As such, given our findings, it is plausible that socially prescribed perfectionism may both generate beliefs of life not being worth living while simultaneously intensifying the impact that such beliefs have on suicide.

4.4. Concluding remarks

We conducted a theory-driven longitudinal test of the EMPDS using moderated mediation in a sample of community adults. Results revealed difficulties accepting the past explain both when and why socially prescribed perfectionism places people at risk for depressive symptoms. Specifically, socially prescribed perfectionism appears to both generate difficulties accepting the past and amplifies the impact that these difficulties have on depressive symptoms. Clinicians treating patients with elevated socially prescribed perfectionism are encouraged to consider that such patients would likely benefit from treatments that allow them to develop a more forgiving autobiographical narrative.

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Table 1

Means, standard deviations, and bivariate correlations

Variables	1	2	3	4	5	6	7
1. Socially prescribed perfectionism (time 1)	—						
2. Depressive symptoms (time 1)	.40***	—					
3. Difficulties accepting the past (time 2)	.34***	.58***	—				
4. Socially prescribed perfectionism (time 1) x difficulties accepting the past (time 2)	.07	.33***	–.22***	—			
5. Depressive symptoms (time 2)	.36***	.83***	.61***	–.38***	—		
6. Age	–.08	.02	–.09	.07	–.02	—	
7. Gender	.09	.07	.08	–.06	.09	.00	—
Mean	17.3	8.1	34.4	–0.3	6.8	45.5	1.7
Standard deviation	7.1	7.8	11.8	1.1	7.5	13.2	0.5
Minimum	5.0	0.0	16.0	–8.7	0.0	22.0	1.0
Maximum	35.0	54.0	75.0	4.0	53.0	86.0	2.0
Cronbach's alpha (α)	.88	.91	.93	n/a	.93	n/a	n/a

Note. Missing data handled using listwise deletion (N = 264).

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

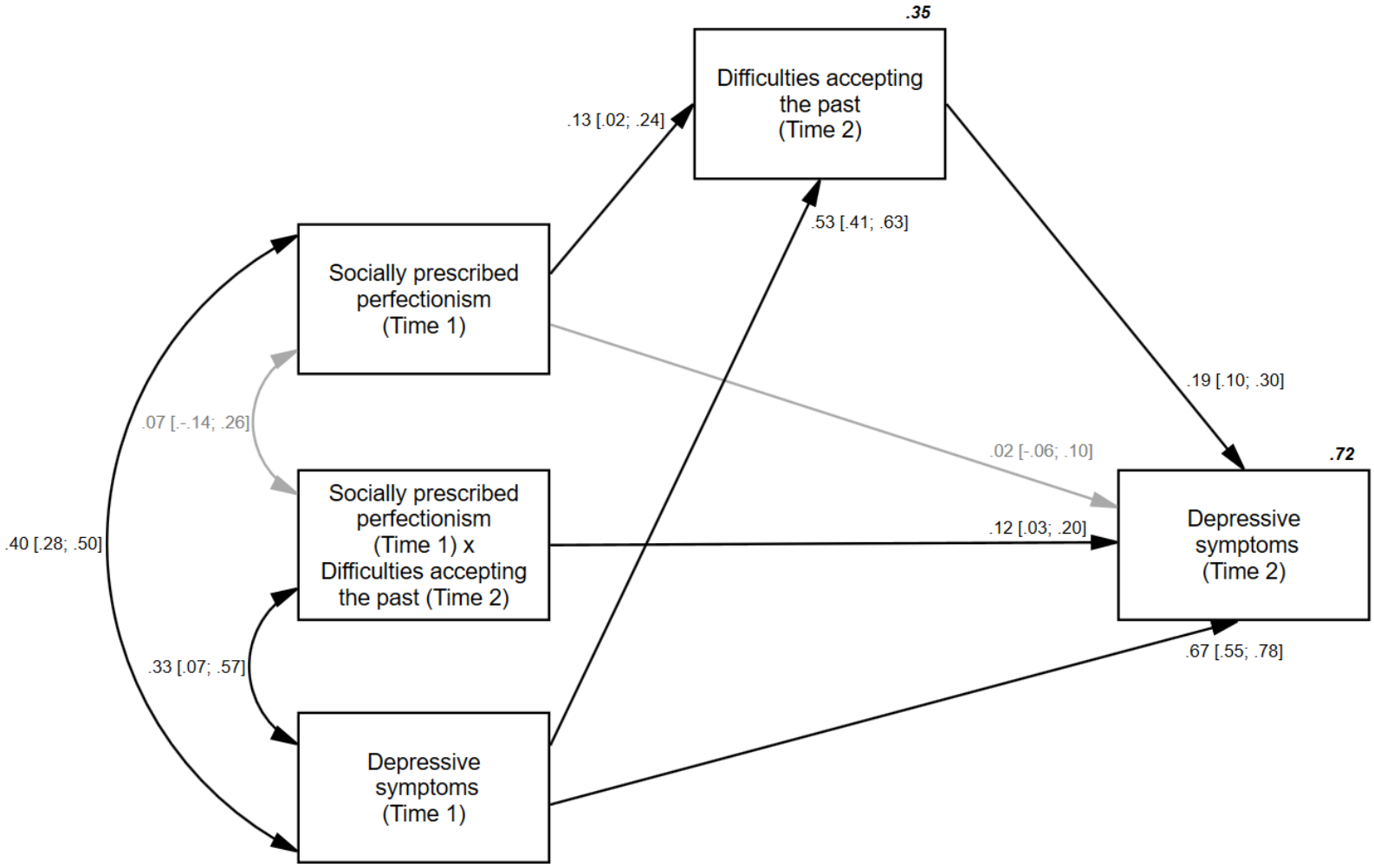

Figure 1. Path diagram. Rectangles represent manifest variables. Estimates are standardized. Error terms not displayed. Double-headed black arrows indicate significant correlations ($p < .05$). Single-headed black arrows represent significant paths ($p < .05$). Single-headed grey arrows represent non-significant paths ($p > .05$). Bolded italicized numbers indicate the proportion of variance explained.

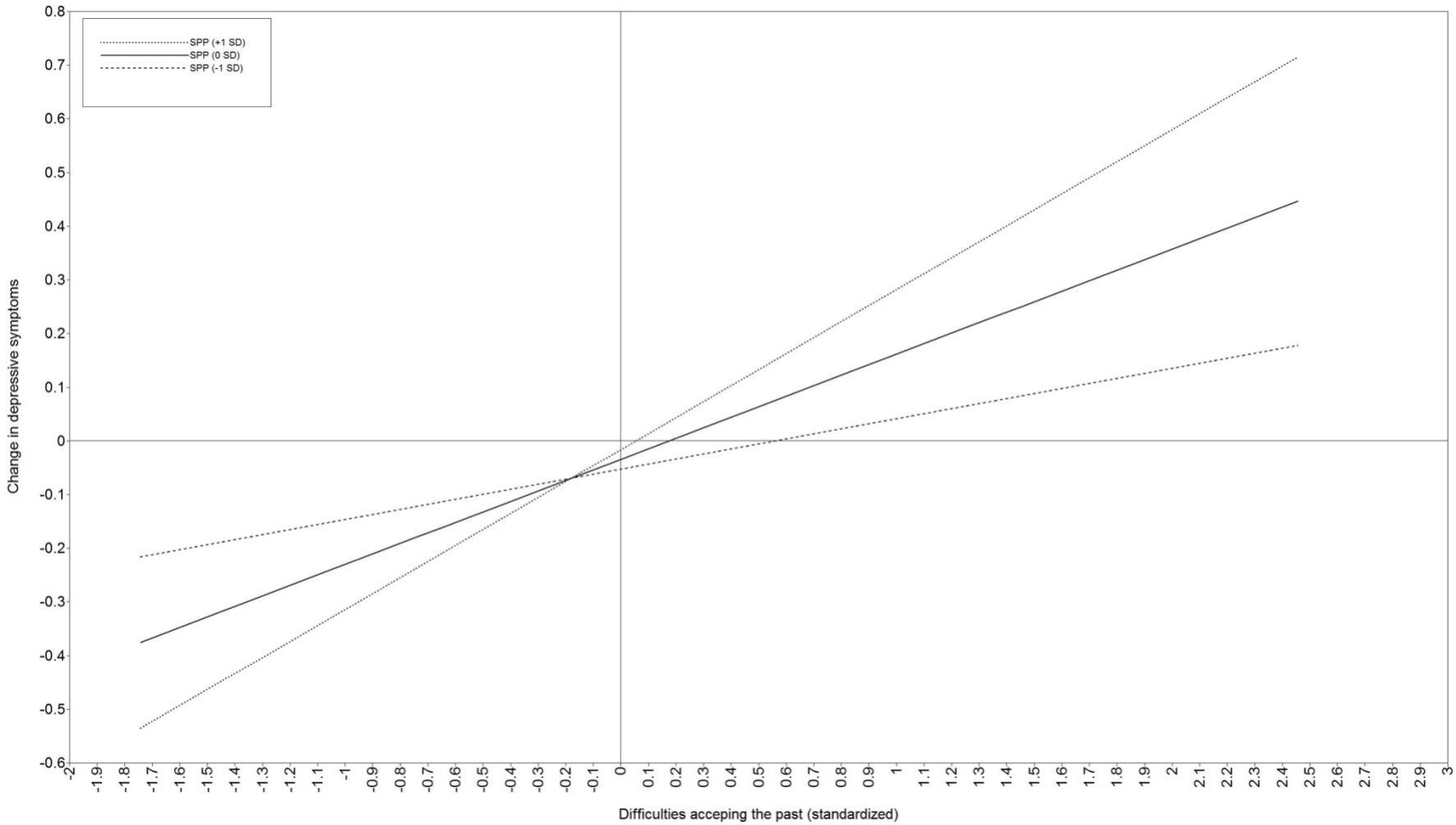

Figure 2. Simple slope plots for relationship between difficulties accepting the past and follow-up depressive symptoms (controlling for baseline depressive symptoms) across levels of socially prescribed perfectionism. **SPP** = socially prescribed perfectionism.