Short Communication

Self-critical perfectionism confers vulnerability to depression after controlling for neuroticism: A longitudinal study of middle-aged, community-dwelling women

Simon B. Sherry [a,*], Chantal M. Gautreau [a], Aislin R. Mushquash [b], Dayna L. Sherry [c], Stephanie L. Allen [a]

[a] Department of Psychology and Neuroscience, Dalhousie University, 1355 Oxford Street, PO Box 15000, Halifax, Nova Scotia B3H4R2, Canada
[b] Mental Health Outpatient Programs, St. Joseph's Care Group, 710 Victoria Avenue East, Thunder Bay, Ontario P7C5P7, Canada
[c] Queen Elizabeth II Health Sciences Centre, 1276 South Park Street, Halifax, Nova Scotia B3H2Y9, Canada

ARTICLE INFO

ABSTRACT

Self-critical perfectionism (i.e., negative reactions to perceived failures, concern over others' criticism and expectations, doubts about abilities, and intense self-rebuke) represents a putative vulnerability factor for depressive symptoms. However, few studies have examined self-critical perfectionism and depressive symptoms longitudinally, and no longitudinal study has tested whether the relationship between self-critical perfectionism and depressive symptoms holds after controlling for neuroticism. Past research on self-critical perfectionism and depressive symptoms has used either undergraduate or psychiatric samples, suggesting a need to broaden this relatively narrow evidence base. The present study advances previous research by testing the relationship between self-critical perfectionism and depressive symptoms, while controlling for neuroticism, in a longitudinal study of 218 middle-aged, community-dwelling women. Wave 1 self-critical perfectionism significantly predicted increases in Wave 2 depressive symptoms after controlling for Wave 1 neuroticism and Wave 1 depressive symptoms, thereby supporting study hypotheses. These data suggest self-critical perfectionism (a lower-order, narrow-band personality trait) may be a unique and a specific lower-order personality trait that is neither captured by nor redundant with neuroticism (a higher-order, broad-band personality trait). Self-critical perfectionism may represent part of the premorbid personality of individuals vulnerable to depressive symptoms.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Theoretical models, case histories, and empirical studies suggest perfectionism confers vulnerability to depressive symptoms (i.e., perfectionism is believed to occur temporally prior to, and to predict increases in, depressive symptoms; Sherry et al., 2013). That said, important gaps remain in our knowledge of the perfectionism–depressive symptoms connection. In the present study, we address one such gap by conducting a longitudinal study of middle-aged, community-dwelling women that tested if perfectionism is a vulnerability factor for depressive symptoms after controlling for neuroticism.

1.1. Self-critical perfectionism and depressive symptoms

Self-critical perfectionism is an emerging construct integrating psychodynamic (Blatt, 1995), cognitive-behavioral (Frost, Marten, Lahart, & Rosenblate, 1990), and interpersonal (Hewitt & Flett, 1991) models of perfectionism. Dunkley, Zuroff, and Blankstein (2003) proposed self-critical perfectionism involves a constellation of traits: negative reactions to perceived failures, concern over others' criticism and expectations, doubts about abilities, and intense self-rebuke. Evidence suggests these traits cohere together in a reliable, valid manner (McGrath et al., 2012).

Self-critical perfectionism is conceptualized as a vulnerability factor for depressive symptoms. Consistent with this view, McGrath et al. (2012) studied 240 undergraduates using a longitudinal design and found self-critical perfectionism predicted increases in depressive symptoms (see Sherry et al., 2013 for a similar result). Theory and evidence thus converge to suggest self-critical perfectionism encapsulates core attributes of (e.g., self-rebuke) and central preoccupations for (e.g., self-doubt) individuals vulnerable to depressive symptoms.

1.2. Improving upon prior research

In research on self-critical perfectionism and depressive symptoms, cross-sectional studies are frequent and longitudinal studies

are scarce, meaning questions of directionality and temporal precedence remain largely unanswered (see McGrath et al., 2012; Sherry et al., 2013 for exceptions). To our knowledge, the present study is the first to investigate self-critical perfectionism and depressive symptoms in community-dwelling, middle-aged women. Past research involves undergraduate and psychiatric samples and indicates self-critical perfectionism is positively correlated with depressive symptoms (e.g. Clara, Cox, & Enns, 2007; McGrath et al., 2012). However, there is a need to broaden this relatively narrow evidence base, as results from these studies may not generalize to community samples. Moreover, women are more likely than men to become depressed, and community-dwelling, middle-aged women often occupy multiple roles (e.g., mother and spouse) that increase their vulnerability to depressive symptoms (Hyde, Mezulis, & Abramson, 2008).

Some researchers (Rice, Ashby, & Slaney, 2007) question if lower-order, narrow-band personality traits such as self-critical perfectionism add incrementally to our understanding of depressive symptoms beyond higher-order, broad-band personality traits such as neuroticism (i.e., a dispositional tendency to experience negative emotions). As self-critical perfectionism and depressive symptoms both positively correlate with neuroticism (Rice et al., 2007), we controlled for neuroticism as a possible confounding variable in the present study. By including self-critical perfectionism and neuroticism in the same predictive model, we evaluated the unique and the relative contribution of each variable to depressive symptoms. In sum, a longitudinal study of community-dwelling, middle-aged women controlling for neuroticism would advance research on perfectionism and depressive symptoms.

1.3. Hypotheses

We hypothesized Wave 1 self-critical perfectionism would predict increases in Wave 2 depressive symptoms after controlling for Wave 1 neuroticism and Wave 1 depressive symptoms (see Fig. 1). This hypothesis builds upon theory and research suggesting self-critical perfectionism is a unique, lower-order vulnerability factor for depressive symptoms that is not redundant with neuroticism (Dunkley, Sanislow, Grilo, & McGlashan, 2009; Sherry et al., 2013).

2. Method

2.1. Participants

We recruited 218 middle-aged, community-dwelling women, with a mean age of 50.06 years ($SD = 4.92$) and an average of 15.76 ($SD = 3.01$) years of education. Most participants were Caucasian (92.5%), worked full-time (65.1%), and were married (82.6%).

2.2. Measures

2.2.1. Self-critical perfectionism

Self-critical perfectionism was measured using the 5-item short-form of the socially prescribed perfectionism subscale (e.g., "Others expect perfection from me") of Hewitt and Flett's Multidimensional Perfectionism Scale (HFMPS; Hewitt & Flett, 1991), the 5-item short-form of the concern over mistakes subscale (e.g., "People will think less of me if I make a mistake") of Frost's Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), the 4-item doubts about actions subscale (e.g., "Even when I do something carefully, I feel it is not right") of the FMPS, and the 5-item self-criticism subscale (e.g., "I am not satisfied with what I have") of the Depressive Experience Questionnaire (DEQ; Bagby, Parker, Joffe, & Buis, 1994). The HFMPS and DEQ are rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The FMPS is rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Studies support the

reliability and validity of these subscales (McGrath et al., 2012). In the present study, alpha reliabilities for the self-critical perfectionism subscales were good ($\alpha s \geqslant .82$; see Supplementary Table S1).

2.2.2. Neuroticism

Neuroticism was measured using the 4-item neuroticism subscale (e.g., "I have mood swings") of the Mini-International Personality Item Pool (Mini-IPIP-N; Donnellan, Oswald, Baird, & Lucas, 2006). The Mini-IPIP-N is rated on a 5-point scale from 1 (*very inaccurate*) to 5 (*very accurate*). Research supports the reliability and the validity of this subscale (Donnellan et al., 2006). The alpha reliability for the Mini-IPIP-N was acceptable in the present study ($\alpha = .62$; see Supplementary Table S1).

2.2.3. Depressive symptoms

Depressive symptoms were measured using the 4-item short-form of the depression subscale (e.g., "hopeless") of the Profile of Mood States (POMS-D; McNair, Lorr, & Droppleman, 1992) as well as the 4-item short-form of Form G (DACL-G; e.g., "depressed") and 4-item short-form of Form E (DACL-E; e.g., "downcast") of the Depression Adjective Checklist (Lubin, 1965). The POMS and DACL are rated on a 5-point scale from 0 (*not at all*) to 4 (*extremely*). Studies support the reliability and validity of these subscales (McGrath et al., 2012). In the present study, alpha reliabilities for the depressive symptoms subscales were good ($\alpha s \geqslant .76$; see Supplementary Table S1).

2.3. Procedure

Our data originate from a larger study of mothers and daughters (see Mushquash & Sherry, 2013). This study was approved by a university ethics board. Daughters were recruited via online advertisements and paper flyers. Daughters provided contact information for their mothers (i.e., an adult woman in a maternal caretaking role). Mothers (i.e., the participants in our study) included biological mothers (96.8%), adoptive mothers (1.4%), aunts (0.4%), grandmothers (0.4%), and guardians (1.0%). Participation was voluntary and all participants had Internet access. At Wave 1, participants received an email link to an online consent form. After consenting, participants were redirected to an online survey assessing self-critical perfectionism, neuroticism, and depressive symptoms. At Wave 2 (21 days later), participants received another email link to an online survey assessing depressive symptoms. Attrition rates were low, with 89.4% of participants completing Wave 2. Participants were compensated by entry into a $50 gift certificate draw.

2.4. Data analytic plan

Confirmatory factor analysis (CFA) tested our measurement model and structural equation modeling (SEM) tested our hypothesized structural model. Specifically, SEM tested whether Wave 1 self-critical perfectionism predicted Wave 2 depressive symptoms after controlling for Wave 1 neuroticism and Wave 1 depressive symptoms. SEM involved AMOS 7.0. A well-fitting model includes a χ^2/df ratio around 2, a comparative fit index (CFI) and incremental fit index (IFI) around .95, and root-mean-square error of approximation (RMSEA) around .08.

3. Results

3.1. Missing data and descriptive statistics

Overall, 3.7% of data were missing. Missing data were missing completely at random (MCAR), as suggested by a MCAR test,
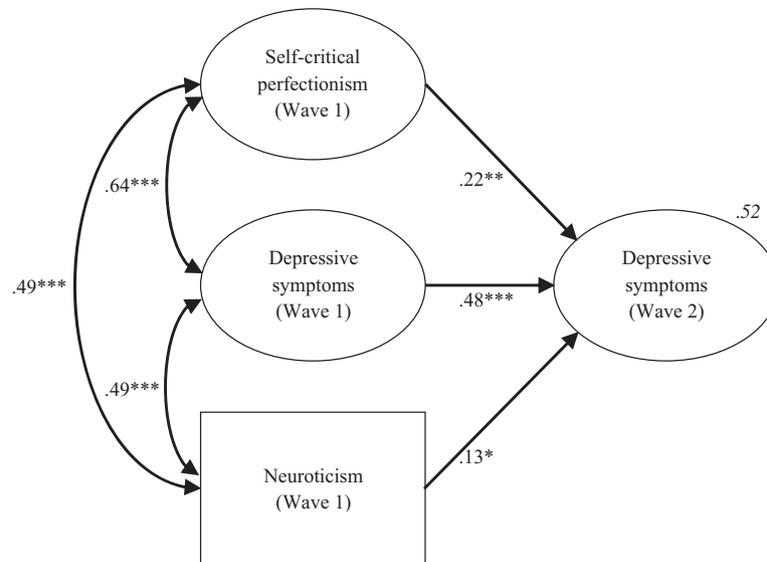
Fig. 1. Ovals represent latent variables. Rectangles represent manifest indicators. Single-headed arrows represent paths. Numbers beside single-headed arrows represent standardized path coefficients. Double-headed arrows represent correlations. Numbers beside double-headed arrows represent correlations. The italicized number in the upper right hand of Wave 2 depressive symptoms represents the proportion of variance explained. $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

$\chi^2(1104, N = 218) = 1098.78$, $p > .05$. A full information maximum likelihood estimation approach was used in handling missing data. Means, standard deviations, and ranges for manifest indicators are in Supplementary Table S1.

3.2. Alpha reliabilities for aggregated variables and bivariate correlations

Manifest indicators were aggregated; specifically, manifest indicators were standardized (i.e., transformed into z-scores) and summed before analyses. For example, the Wave 1 depressive symptoms variable in Table 1 was formed by standardizing the POMS-D, DACL-G, and DACL-E and summing these subscales. Alpha reliabilities for aggregated variables were excellent (see Table 1) and similar to other studies using these variables (Sherry et al., 2013).

As Table 1 shows, self-critical perfectionism, neuroticism, and depressive symptoms were positively correlated. Wave 1 and 2 depressive symptoms were also positively correlated. These correlations resemble previous studies (Sherry et al., 2013) and suggest merit in testing our hypothesized structural model. Bivariate correlations suggested neuroticism is a suitable covariate. Study variables were not significantly correlated with demographic variables (i.e., age, years of education, employment situation, and relationship status). Ethnicity had insufficient variability to analyze. Demographics were therefore not used as covariates.

3.3. Measurement model

CFA tested if our measurement model was a valid construct. This model involved three latent variables (i.e., Wave 1 self-critical

perfectionism and Waves 1 and 2 depressive symptoms). The latent self-critical perfectionism variable involved four manifest indicators (i.e., concern over mistakes, socially prescribed perfectionism, doubts about actions, and self-criticism) and each latent depressive symptoms variable involved three manifest indicators (POMS-D, DACL-G, and DACL-E). Neuroticism was measured with one manifest indicator.

Latent variables were allowed to covary and no structural relations were specified. Manifest indicators were required to load onto their corresponding latent variables. Our measurement model fit the data well: $\chi^2(36, N = 218) = 83.99$, $p = .000$; $\chi^2/df = 2.33$; CFI = .98; IFI = .98; RMSEA = .08. Manifest indicators for this model had significant ($p < .001$) standardized factor loadings. These factor loadings ranged from .68 to .85 for Wave 1 self-critical perfectionism, from .87 to .96 for Wave 1 depressive symptoms, and from .93 to .95 for Wave 2 depressive symptoms. Corresponding error terms were correlated across waves. In sum, CFA suggested latent variables were adequately measured by their corresponding manifest indicators.

3.4. Structural model

Our hypothesized structural model fit the data well: $\chi^2(36, N = 218) = 83.99$, $p = .000$; $\chi^2/df = 2.33$; CFI = .98; IFI = .98; RMSEA = .08. As Fig. 1 shows, self-critical perfectionism, neuroticism, and depressive symptoms were positively and significantly correlated. Depressive symptoms were also highly stable, with Wave 1 depressive symptoms significantly predicting Wave 2 depressive symptoms. As hypothesized, Wave 1 self-critical perfectionism significantly predicted Wave 2 depressive symptoms after controlling for both Wave 1 neuroticism and Wave 1 depressive symptoms. Wave 1 neuroticism also significantly predicted Wave 2 depressive symptoms after controlling for Wave 1 self-critical perfectionism and Wave 1 depressive symptoms.

4. Discussion

Our longitudinal study advances past research (Dunkley et al., 2003) by stringently testing whether self-critical perfectionism is a vulnerability factor for depressive symptoms in a sample of middle-aged, community-dwelling women. As hypothesized, Wave 1

Table 1
Alpha reliabilities for aggregated variables and bivariate correlations.

Variable	α	1	2	3	4
1. Self-critical perfectionism (Wave 1)	.93	–	.48***	.60***	.56***
2. Neuroticism (Wave 1)	–		–	.48***	.50***
3. Depressive symptoms (Wave 1)	.93			–	.69***
4. Depressive symptoms (Wave 2)	.95				–

*** $p < .001$.

self-critical perfectionism predicted increases in Wave 2 depressive symptoms after controlling for Wave 1 neuroticism and Wave 1 depressive symptoms.

4.1. Self-critical perfectionism, neuroticism, and depressive symptoms

Self-critical perfectionism is a putative vulnerability factor for depressive symptoms marked by intense self-rebuke, nagging self-doubt, negative reactions to perceived failures, and concern over others' criticism and expectations. These traits appear to represent core attributes of, and central preoccupations for, individuals vulnerable to depression. In fact, a growing body of evidence suggests self-critical perfectionism represents part of the premorbid personality of individuals vulnerable to depressive symptoms (Dunkley et al., 2009).

Our study joins two other recent longitudinal studies (McGrath et al., 2012; Sherry et al., 2013) by indicating that self-critical perfectionism comes before and contributes to increases in depressive symptoms. Each of these three studies aggregated multiple perfectionism facets (e.g., socially prescribed perfectionism) into self-critical perfectionism, suggesting this integrative approach represents one reliable and valid way to operationalize perfectionism. Our study also extends past research, which used undergraduate samples (McGrath et al., 2012; Sherry et al., 2013), by demonstrating self-critical perfectionism confers vulnerability to depressive symptoms in middle-aged, community-dwelling women.

Our study is the first that we know of to demonstrate self-critical perfectionism (a lower-order, narrow-band personality trait) predicts increases in depressive symptoms while controlling for neuroticism (a higher-order, broad-band personality trait). These data suggest self-critical perfectionism may represent a unique and a specific lower-order personality trait that is neither captured by nor redundant with neuroticism.

4.2. Limitations and future directions

Self-critical perfectionism and depressive symptoms were measured via latent variables with multiple manifest indicators. Such latent variables provide more accurate statistical estimates (McGrath et al., 2012). In contrast, only a single manifest indicator was used to measure neuroticism. Future studies should use latent variables to measure neuroticism. The lower alpha reliability for the Mini-IPIP-N may also have resulted in an underestimation of the associations among neuroticism, self-critical perfectionism, and depressive symptoms.

Our sample involved mothers of undergraduate women, raising questions about the representativeness of our sample and the generalizability of our results. Specifically, our sample was well-educated (averaging of 15.76 years of education) and almost exclusively Caucasian. Future studies should also test the specificity of the self-critical perfectionism construct. For example, is self-critical perfectionism a vulnerability factor for a wide range of emotional distress (e.g., anxiety, anger, etc.) or only for depressive symptoms?

4.3. Concluding remarks

Case histories of neurotic perfectionists describe tortured individuals suffering from high levels of perfectionism, neuroticism, and depression (Blatt, 1995). In these case histories, the temporal ordering and the relative contribution of these three variables are unclear. Our study indicates self-critical perfectionism and neuroticism represent uniquely important vulnerability factors for depressive symptoms. Such knowledge is essential to developing assessments and treatments to help individuals suffering from perfectionism, neuroticism, and depression.

Acknowledgments

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.paid.2014.04.035.

References

Bagby, R., Parker, J., Joffe, R., & Buis, T. (1994). Reconstruction and validation of the Depressive Experiences Questionnaire. *Assessment, 1*, 59–68.

Blatt, S. (1995). The destructiveness of perfectionism. *American Psychologist, 50*, 1003–1020.

Clara, I., Cox, B., & Enns, M. (2007). Assessing self-critical perfectionism in clinical depression. *Journal of Personality Assessment, 88*, 309–316.

Donnellan, M., Oswald, F., Baird, B., & Lucas, R. (2006). The mini-IPIP scales. *Psychological Assessment, 18*, 192–203.

Dunkley, D., Sanislow, C., Grilo, C., & McGlashan, T. (2009). Self-criticism versus neuroticism in predicting depression and psychosocial impairment. *Comprehensive Psychiatry, 50*, 335–346.

Dunkley, D., Zuroff, D., & Blankstein, K. (2003). Self-critical perfectionism and daily affect. *Journal of Personality and Social Psychology, 84*, 234–252.

Frost, R., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449–468.

Hewitt, P., & Flett, G. (1991). Perfectionism in the self and social contexts. *Journal of Personality and Social Psychology, 60*, 456–470.

Hyde, J., Mezulis, A., & Abramson, L. (2008). The ABCs of depression: Integrating affective, biological, and cognitive models. *Psychological Review, 115*, 291–313.

Lubin, B. (1965). Adjective checklists for measurement of depression. *Archives of General Psychiatry, 12*, 57–62.

McGrath, D., Sherry, S., Stewart, S., Mushquash, A., Allen, S., Nealis, L., et al. (2012). Reciprocal relations between self-critical perfectionism and depressive symptoms. *Canadian Journal of Behavioural Science, 44*, 169–181.

McNair, D., Lorr, M., & Droppleman, L. (1992). *EdITS manual for the Profile of Mood States*. San Diego, CA: EdITS.

Mushquash, A., & Sherry, S. (2013). Testing the perfectionism model of binge eating in mother daughter dyads. *Eating Behaviors, 14*, 171–179.

Rice, K., Ashby, J., & Slaney, R. (2007). Perfectionism and the five-factor model of personality. *Assessment, 14*, 385–398.

Sherry, S., Nealis, L., Macneil, M., Stewart, S., Sherry, D., & Smith, M. (2013). Informant reports add incrementally to the understanding of the perfectionism–depression connection. *Personality and Individual Differences, 54*, 957–960.