

Is perfectionism associated with academic burnout through repetitive negative thinking? (#25656)

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Is perfectionism associated with academic burnout through repetitive negative thinking?

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Academic burnout is prevalent among university students, although understanding of what predicts burnout is limited. This study aimed to test the direct and indirect relationship between two dimensions of perfectionism (Perfectionistic Concerns and Perfectionistic Strivings) and the three elements of academic burnout (exhaustion, inadequacy, and cynicism) through repetitive negative thinking. In a cross-sectional survey, undergraduate students ($n = 126$, $M_{age} = 23.64$, 79% Female) completed well-validated measures of perfectionism, repetitive negative thinking, and academic burnout. Perfectionistic Concerns was directly associated with all elements of burnout, as well as indirectly associated with exhaustion via repetitive negative thinking. Perfectionistic Striving was directly associated with less inadequacy and cynicism; however, there were no indirect associations between perfectionistic strivings and academic burnout operating through repetitive negative thinking. Repetitive negative thinking was also directly related to more burnout exhaustion and inadequacy, but not cynicism. It is concluded that future research should investigate whether interventions targeting perfectionistic concerns and repetitive negative thinking can reduce academic burnout in university students. In addition, future research should investigate whether promoting striving for success, but not fear of failure, might also serve to reduce academic burnout.

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Abstract

Academic burnout is prevalent among university students, although understanding of what predicts burnout is limited. This study aimed to test the direct and indirect relationship between two dimensions of perfectionism (Perfectionistic Concerns and Perfectionistic Strivings) and the three elements of academic burnout (exhaustion, inadequacy, and cynicism) through repetitive negative thinking. In a cross-sectional survey, undergraduate students ($n = 126$, $M_{age} = 23.64$, 79% Female) completed well-validated measures of perfectionism, repetitive negative thinking, and academic burnout. Perfectionistic Concerns was directly associated with all elements of burnout, as well as indirectly associated with exhaustion via repetitive negative thinking. Perfectionistic Striving was directly associated with less inadequacy and cynicism; however, there were no indirect associations between perfectionistic strivings and academic burnout operating through repetitive negative thinking. Repetitive negative thinking was also directly related to more burnout exhaustion and inadequacy, but not cynicism. It is concluded that future research should investigate whether interventions targeting perfectionistic concerns and repetitive negative thinking can reduce academic burnout in university students. In addition, future research should investigate whether promoting striving for success, but not fear of failure, might also serve to reduce academic burnout.

Keywords: Burnout; Repetitive negative thinking; Perfectionism; Strivings;

Individuals experiencing burnout have difficulty committing to the task at hand, feel detached and dissatisfied with their work, and are less productive (Leiter & Maslach, 2003). Given its association with poor educational outcomes, recent research has begun to focus on academic burnout among university students (Mazurkiewicz, Korenstein, Fallar, & Ripp, 2011; Zhang, Gan, & Cham, 2007). Academic burnout involves three elements: *exhaustion* due to university demands; feelings of *inadequacy* as a student due to the long-term stress of striving for academic achievement; and a *cynical attitude* toward university (Merino-Tejedor, Sánchez-García, Prizmic-Kuzmica, & Vigil-Colet, 2014; Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009). Academic burnout is associated with various negative consequences, including poor academic outcomes, increased psychological distress, reduced life satisfaction, and sleep deprivation (e.g., May, Bauer, & Fincham, 2015; Mazurkiewicz et al., 2011; Salmela-Aro & Upadaya, 2014). Given that academic burnout is highly prevalent among university students (e.g., Kristanto, Chen, & Thoo, 2016; Mazurkiewicz et al., 2011), it is important to develop methods of reducing academic burnout. A vital step towards this is to identifying factors associated with burnout. Perfectionism has been linked to numerous psychological symptoms (e.g., Limburg, Watson, Hagger, & Egan, 2017) and preliminary evidence also indicates that it predicts academic burnout (Kljajic, Gaudreau, & Franche, 2017). Additionally, there is emerging evidence that the relationship between perfectionism and various psychological symptoms is mediated by repetitive negative thinking (Egan, Hattaway, & Kane, 2014). Consequently, the current study will investigate whether two forms of perfectionism (Perfectionistic Concerns and Perfectionistic Strivings) predict the elements of academic burnout, and whether these relationships are mediated by repetitive negative thinking.

Perfectionism

Perfectionism has been implicated in the development and maintenance of a variety of psychopathologies (e.g., Limburg et al., 2017) and is also associated with academic burnout (Kljajic et al., 2017). Perfectionism consists of two higher order dimensions: Perfectionistic Concerns and Perfectionistic Strivings (Burgess, Frost, & DiBartolo, 2016; Limburg et al., 2017). Perfectionistic Concerns involves being overly concerned about mistakes in performance as well as doubting one's actions, and is consistently related to negative psychological outcomes. Perfectionistic Strivings involves the setting of high personal standards, which may be associated

with positive and negative outcomes (Bieling, Israeli, & Antony, 2004; Limburg et al., 2017; Smith, et al., 2016; Stoeber & Childs, 2010).

The relationship between perfectionism and burnout has been examined in various non-academic contexts, with Perfectionistic Concerns reliably associated with higher burnout, and aspects of burnout (exhaustion, inadequacy, and cynicism), in many samples, including teachers and junior athletes (e.g., Hill, 2013, Stoeber & Rennert, 2008). In contrast, Perfectionistic Strivings has been associated with lower levels of burnout, although the relationship is somewhat inconsistent across the various aspects of burnout (Hill, 2013; Stoeber & Rennert, 2008).

The few studies that have directly examined the relationship between perfectionism and academic burnout have reported broadly consistent findings. Zhang and colleagues (2007) demonstrated that maladaptive and adaptive perfectionism (similar to Perfectionistic Concerns and Perfectionistic Strivings, respectively) predicted aspects of academic burnout in a sample of 482 Chinese university students. Specifically higher levels of maladaptive perfectionism predicted more exhaustion and cynicism, and less engagement with university. Higher levels of adaptive perfectionism predicted lower levels of exhaustion and cynicism, and more engagement. These results suggest that individuals with higher levels of Perfectionistic Concerns are more likely to experience higher levels of burnout, whilst individuals with higher levels of Perfectionistic Strivings are likely to experience lower burnout and higher study efficacy.

Kljajic and colleagues (2017) categorised students as either pure socially prescribed perfectionists, pure self-oriented perfectionists, mixed perfectionists (involving high levels of socially prescribed and self-oriented perfectionism), or non-perfectionistic. Socially prescribed perfectionists (related to Perfectionistic Concerns) were more likely to experience burnout, as measured separately by exhaustion, cynicism, and study efficacy, than non-perfectionists or mixed perfectionists. Moreover, self-oriented perfectionists (related to Perfectionistic Strivings) were less likely to experience burnout than non-perfectionists and mixed perfectionists. Perfectionism also predicts academic burnout among high school students (Shih, 2012).

Neither Kljajic et al. (2017), nor Zhang et al. (2007), investigated perfectionistic concerns and perfectionistic strivings, which are now well-established constructs in the literature. Additionally, few studies have considered the possible role of variables that may mediate the association between perfectionism and academic burnout. Repetitive negative thinking is one potential candidate that warrants investigation.

Repetitive negative thinking is an unhelpful continual thought process about past and/or future negative situations, leading to negative emotional states (McLaughlin & Nolen-Hoeksema, 2011). It appears to be a risk factor for the development of numerous types of psychopathology (e.g., McEvoy, Watson, Watkins, & Nathan, 2013). Interestingly, repetitive negative thinking mediates the relationship between perfectionism and various psychological difficulties, including depression (Flett, Coulter, Hewitt, & Nepon, 2011), post-traumatic stress disorder (Egan et al., 2014), and psychological distress (Macedo et al., 2015; O'Connor, O'Connor, & Marshall, 2007). Macedo and colleagues (2015) found that repetitive negative thinking partially mediated the positive relationship between Perfectionistic Concerns and aspects of psychological distress (anxiety, depression, anger-hostility, fatigue, and vigor). Interestingly, Repetitive Negative Thinking fully mediated the relationship between Perfectionistic Strivings and depression and fatigue, meaning that Perfectionistic Strivings only predicted higher distress through its relationship with Repetitive Negative Thinking. However, it should be noted that Perfectionistic Strivings did not predict the other aspects of distress in this study. Given the associations between repetitive negative thinking and both perfectionism and other psychological outcomes, it is plausible that repetitive negative thinking may mediate associations between perfectionism and academic burnout.

The current study aimed to 1) replicate associations between perfectionism (Perfectionistic Concerns and Perfectionistic Strivings) and academic burnout (exhaustion, inadequacy, and cynicism) and 2) investigate whether Repetitive Negative Thinking mediates the relationships between perfectionism and the elements of academic burnout. The hypothesized model is summarized in Figure 1. The model tested the direct pathways between perfectionism, and burnout, as well as the indirect relationships operating via Repetitive Negative Thinking.

[Insert Figure 1 about here]

Method

Participants

The sample initially consisted of 215 Australian university students aged 18 and over, however 89 did not complete multiple measures within the questionnaire and were excluded from the analysis. The final sample was 126 (100 females, 25 males, 1 transgender) ranging in age from 18-69 ($M = 23.64$, $SD = 7.86$), ranging in years at university from 1-8 years ($M = 3.07$, $SD = 1.56$), and studying predominantly full-time (104 full time, 22 part time). Participants were

recruited via convenience sampling from the community through links placed on a social networking website, and via an undergraduate psychology research register with course credit awarded for participation.

Measures

Demographics. Demographic questions measured age, gender, study mode (i.e. full-time or part-time), and number of years completed at university.

Frost Multidimensional Perfectionism Scale - Brief (FMPS-Brief; Burgess et al., 2016). The FMPS-Brief (Burgess et al., 2016) is an 8-item scale measuring two aspects of perfectionism: Perfectionistic Concerns (four items, e.g., *If I fail at university, I am a failure as a person*) and Perfectionistic Strivings (four items, e.g., *I have extremely high goals*). Items are rated on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Scores are summed, with higher scores indicative of higher levels of perfectionistic concerns or strivings. The Perfectionistic Concerns subscale is strongly, positively correlated with measures of depression, anxiety, hoarding, and worry, indicating good convergent validity (Burgess et al., 2016; Limburg et al., 2017). The Perfectionistic Concerns and Strivings subscales have demonstrated good internal consistency in community samples previously ($\alpha = .83$ and $\alpha = .81$, respectively Burgess et al., 2016), as well as in the present study ($\alpha = .78$ and $\alpha = .88$, respectively).

Repetitive Negative Thinking - 10 (RNT-10; McEvoy, Mahoney, & Moulds, 2010). The RNT-10 was adapted from the Repetitive Negative Thinking Scale (McEvoy et al., 2010). It contains 10 items assessing engagement with repetitive negative thinking (e.g., *Once you start thinking about the situation, you can't stop*). Items are rated on a 5-point Likert scale ranging from *not true at all* (1) to *very true* (5). Responses from all 10 items are summed, with higher scores indicate higher levels of engagement with Repetitive Negative Thinking. The RNT-10 is positively correlated with measures of neuroticism, depression, social anxiety, and worry, indicating convergent validity (Mahoney, McEvoy, & Moulds, 2012). The RNT-10 demonstrated scale reliability in initial development ($\alpha = .89$, average inter-item correlation = .44; McEvoy et al., 2010) and subsequent research ($\alpha = .91$, average inter-item correlation = .49; Mahoney et al., 2012). In the present study the internal consistency of the RNT-10 was high ($\alpha = .94$).

School Burnout Inventory (SBI; Salmela-Aro & Näätänen, 2005). The SBI (Salmela-Aro & Näätänen, 2005) is a 9-item questionnaire with 3 subscales: Exhaustion at School (four items,

e.g., *I feel overwhelmed by my university work*), Cynicism Toward Meaning of School (three items, e.g., *I feel that I am losing interest in my schoolwork*), and Sense of Inadequacy at School (two items, e.g., *I often have feelings of inadequacy in my university work*). Items are rated on a 6-point Likert-type scale ranging from *completely disagree* (1) to *strongly agree* (6), with subscale scores calculated by summing the respective items. Higher scores reflect higher levels of each construct (Salmela-Aro & Näätänen, 2005). All items had references to ‘*school*’ changed to ‘*university*’ to reflect the university context in this study. The SBI is correlated with academic achievement, and measures of depression and engagement, demonstrating concurrent validity (Salmela-Aro et al., 2009). The SBI demonstrated good internal consistency for subscales ($\alpha = .67 - .80$; Salmela-Aro et al., 2009). In the present study, the exhaustion and cynicism subscales demonstrated good internal consistency ($\alpha = .81$ and $.85$, respectively), but the internal consistency of the inadequacy subscale was low ($\alpha = .54$).

Procedure

This study was approved by the Curtin University Human Research Ethics Committee (RDHS-91-16). Participants accessed the anonymous questionnaire online, whereby they viewed a participant information document and provided informed consent before completing the questionnaire, hosted through Qualtrics. Following questionnaire completion, participants were presented with a debriefing document that outlined the purpose of the research and informed them of where to find more information. Participants who required research participation for their course were credited participation points for completing the survey.

Data analysis

The hypothesized model was tested using path analysis in Mplus. The significance values for both direct and indirect pathways were estimated with a 95% confidence interval using a bootstrapping procedure based on 1000 draws from the data. Modification Indices (MIs > 20 , Hu & Bentler, 1999) were examined and theoretically defensible paths were freed. Goodness-of-fit was assessed using the chi-square statistic and degrees of freedom (Chi-square/df), Comparative Fit Index (CFI; values should be ≥ 0.95), Root Mean Square Error of Approximation (RMSEA; values should be ≤ 0.06), Tucker-Lewis Index (TLI; values should be ≥ 0.95), Standardized Root Mean Square Residual (SRMR; values should be ≤ 0.08 , Hu & Bentler, 1999). Although there was no significant correlation between age and gender and perfectionism, repetitive negative thinking, and burnout, the model was run with and without the control variables of age and

gender and the pattern of significant results did not change. Therefore results from the most parsimonious models without control variables are reported. The correlation between perfectionistic concerns and strivings were controlled for, as were the correlations between burnout exhaustion, inadequacy, and cynicism.

Results

Descriptive statistics and correlations between all variables of interest are summarised in Table 1. Correlations were generally in the expected directions and were small to moderate in magnitude.

[Insert Table 1 about here]

Path Analysis Models

Initial Model. A test of the full model indicated a just-identified model, from which fit statistics were not produced (Supplementary Figure 1). In this model there were statistically significant direct positive effects of Perfectionistic Concerns on Repetitive Negative Thinking, Burnout Exhaustion, Burnout Inadequacy, and Burnout Cynicism. There was also a statistically significant direct effect of Repetitive Negative Thinking on Burnout Exhaustion and Burnout Inadequacy. Additionally, there were statistically significant direct positive effects of Perfectionistic Strivings on Burnout Inadequacy and Burnout Cynicism. There was no direct relationship between Perfectionistic Striving and Repetitive Negative Thinking or Burnout Exhaustion. There was also no direct relationship between Repetitive Negative Thinking and Burnout Cynicism.

Model 2. A second model was run, without the non-significant pathways to test the most parsimonious model. The path analysis revealed good model fit to the data $\chi^2/df = 1.07$, CFI = .999, TLI = .995, RMSEA = .024 (90% CI = .000; .154), SRMR = .030 (see Figure 2).

Direct pathways. There were statistically significant direct positive effects of Perfectionistic Concerns on Repetitive Negative Thinking, Burnout Exhaustion ($p < .001$), Burnout Inadequacy ($p < .001$), and Burnout Cynicism ($p < .001$). There was also a statistically significant direct effect of Repetitive Negative Thinking on Burnout Exhaustion ($p = .001$), and Burnout Inadequacy ($p = .041$). Additionally, there were statistically significant direct positive effects of Perfectionistic Strivings on Burnout Inadequacy ($p < .001$), and Burnout Cynicism ($p = .017$).

Indirect pathways. There were significant indirect relationships between Perfectionistic Concerns and Burnout Exhaustion ($\beta = .121, p = .003, SE = 0.041, 95\% CI = .055 - .190$). No other indirect pathways were observed. See Figure 2 for the final path analysis model with standardized beta, standard error, and 95% confidence intervals for significant pathways.

[Insert figure 2 about here]

Discussion

The aim of the study was to investigate the relationship between perfectionism, repetitive negative thinking, and academic burnout. Consistent with previous research (e.g., Kljajic et al., 2017), Perfectionistic Concerns was independently associated with all three elements of academic burnout among university students. These findings suggest that Perfectionistic Concerns is an important predictor of academic burnout among university students and represents a viable target for interventions aimed at reducing burnout in this population. Previous research has demonstrated that cognitive-behavioural programs are effective in reducing problematic Perfectionistic Concerns and that interventions specifically targeting perfectionism can reduced various psychological symptoms, including eating disorder symptoms, generalised anxiety, and depression (e.g., Rozenal et al., 2017; Shafran et al., 2017; also see Egan, Wade, & Shafran, 2011 for a review). Future studies should investigate whether such interventions targeting Perfectionistic Concerns are similarly effective in reducing academic burnout in university students. Not only would the results of such studies have considerable practical utility, they would also further understanding of the causal nature of the relationship between Perfectionistic Concerns and academic burnout.

Additionally, repetitive negative thinking partially mediated the association between Perfectionistic Concerns and exhaustion. The indirect relationship between Perfectionistic Concerns and exhaustion via Repetitive Negative Thinking is broadly consistent with recent research demonstrating that the relationship between perfectionism various psychological constructs, including burnout, is partially mediated by other variables (e.g., Chang, Lee, Byeon, & Lee, 2015; Luo, Wang, Zhang, Chen, & Quan, 2016; Macedo et al., 2015). It is also consistent with findings that Repetitive negative thinking is a risk factor for multiple psychological symptoms (McEvoy et al., 2013) and that it mediates the relationship between perfectionism and various psychological outcomes (e.g., Flett et al., 2011).

Furthermore, repetitive negative thinking was also directly associated with burnout exhaustion and burnout inadequacy. This highlights the importance of investigating the efficacy of therapeutic programs targeting repetitive negative thinking for students who have high levels of academic burnout (particularly that characterized by exhaustion) and high levels of Perfectionistic Concerns. Repetitive Negative Thinking can be reduced through metacognitive therapy, and this is associated with improvements in several measures of psychological distress (Johnson, Hoffart, Nordahl, & Wampold, 2017; McEvoy, Erceg-Hurn, Anderson, Campbell, & Nathan, 2015). The importance of repetitive negative thinking as a treatment for burnout would critically depend upon whether any modification of a student's repetitive negative thinking is also associated with changes in their experiences of burnout. Future research should investigate the efficacy of such programs in reducing burnout exhaustion in university students.

Perfectionistic Strivings was associated with lower levels of academic burnout, specifically inadequacy and cynicism. This is consistent with previous findings linking constructs closely related to Perfectionistic Strivings (adaptive perfectionism and self-oriented perfectionism) with lower burnout (Klajic et al., 2017; Zhang et al., 2007). This finding is also consistent with the notion that it Perfectionistic Strivings can be a beneficial form of perfectionism (e.g., Stoeber & Childs, 2010). Consequently, it is plausible that promoting students' striving towards high standards, without also increasing concern regarding mistakes (e.g., Perfectionistic Concerns), may help to reduce academic burnout. However given evidence that Perfectionistic Strivings might predict negative psychological outcomes in longitudinal studies (Smith et al., 2016), current findings must be interpreted cautiously.

Finally, Perfectionistic Strivings was not indirectly associated with any aspect of academic burnout via repetitive negative thinking. Somewhat surprisingly, Perfectionistic Strivings was not associated with repetitive negative thinking. This is inconsistent with the results of Macedo and colleagues (2015), who demonstrated that Perfectionistic Strivings predicts depression and fatigue through Repetitive Negative Thinking. Consequently, the relationship between Perfectionistic Strivings and Repetitive Negative Thinking requires further investigation.

The findings of the present study should be interpreted within the context of the limitations. First, the cross-sectional nature of the data precludes any conclusions regarding the temporal order of the associations. Longitudinal research is clearly needed to address this.

Second, the sample was one of convenience and this may limit the generalizability of the findings. Relatedly, although a relatively diverse student sample was recruited for the current study, there was a high rate of dropout and it is unclear what impact this might have had on the findings. Third, the reliability of the inadequacy subscale was low. Further psychometric assessment of this scale in university samples is needed and findings in the current study related to burnout inadequacy should be interpreted with caution. Finally, although a theoretically plausible mediator, repetitive negative is only one of many potential factors that might mediate associations between perfectionism and academic burnout. Future research should examine other potential mediators or moderators within the context of perfectionism and academic burnout. For example, one potential possibility is academic procrastination, which is positively related to Perfectionistic Concerns and negatively related to wellbeing (Jadidi, Mohammadkhani, & Tajrishi, 2001; Steel, 2007). Additionally, individual differences in factors such as imagery, emotion regulation, and coping can exert a strong influence on psychological outcomes (Holmes, Geddes, Colom, & Goodwin, 2008). These variables may also be important to consider in the context of academic burnout in order to best improve student outcomes.

Conclusions

Bearing the limitations in mind, the current study demonstrates that higher levels of Perfectionistic Concerns are associated with greater experiences of academic burnout, both directly and indirectly through increased repetitive negative thinking in the case of burnout exhaustion. Repetitive negative thinking was also directly associated with burnout exhaustion and burnout inadequacy. In contrast, higher levels of Perfectionistic Strivings are associated with less academic burnout. Given that there are treatment programs which can effectively reduce both Perfectionistic Concerns and repetitive negative thinking (McEvoy et al., 2015; Rozental et al., 2017), future research should focus on understanding the extent to which these programs can alleviate academic burnout in university students.

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Figure 1(on next page)

Hypothesised model

Complete hypothesised model of direct pathways between perfectionism, burnout, and indirect effects through repetitive negative thinking

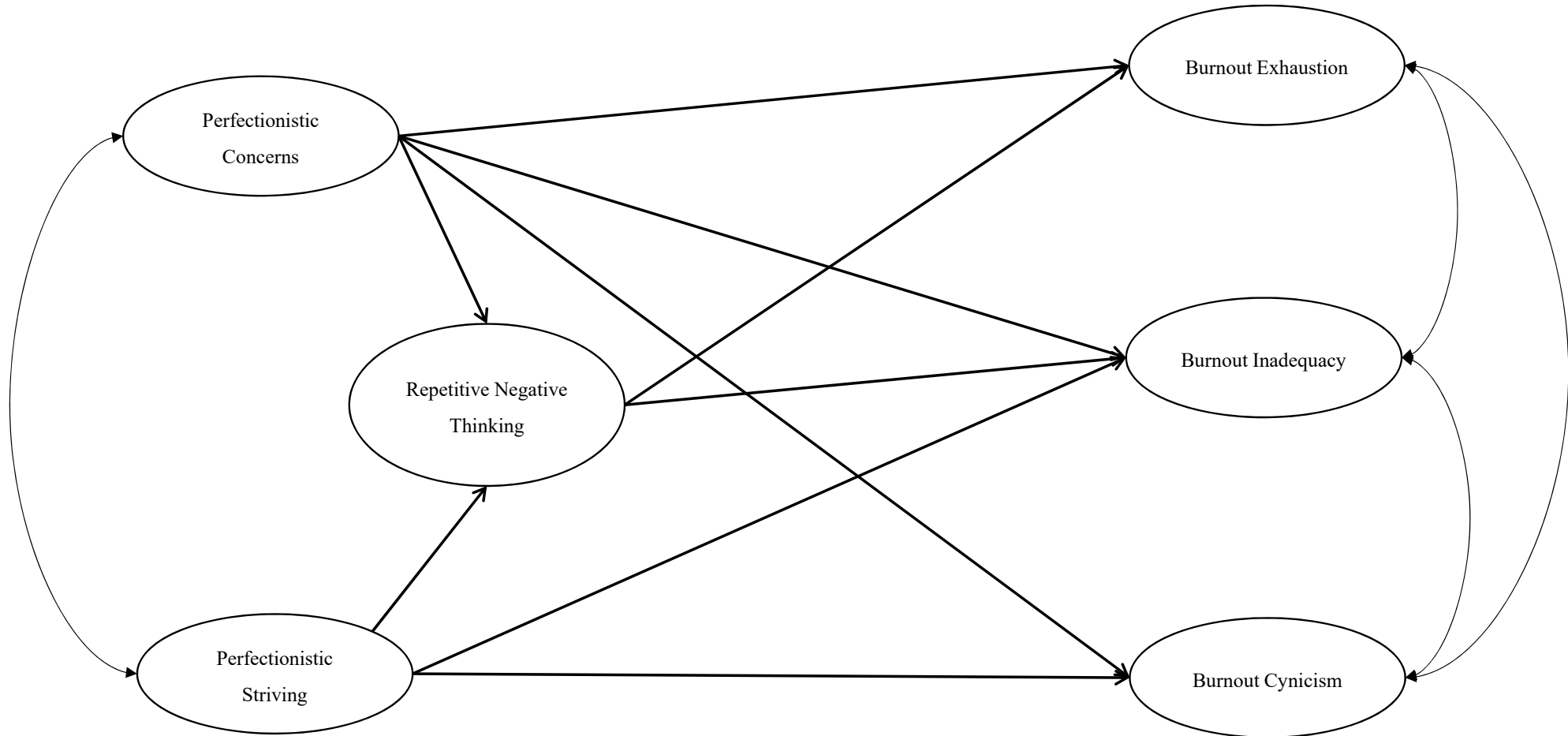


Figure 2 (on next page)

Final tested model

Final tested model with only significant pathways between perfectionism, burnout, and repetitive negative thinking considered. Only significant pathways coefficients represented. All coefficients are standardized with 95% confidence intervals in brackets

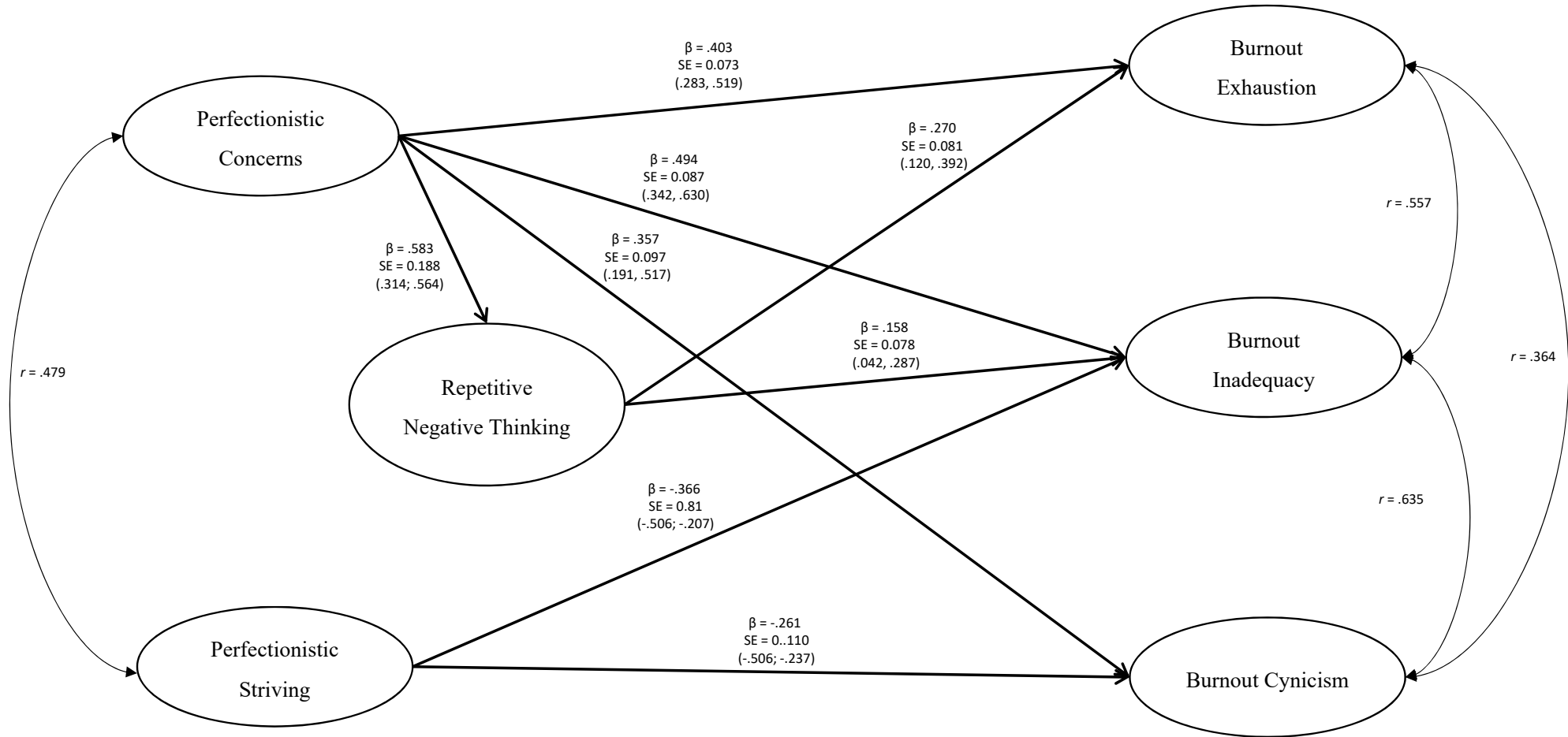


Table 1(on next page)

Descriptive Statistics and Correlation matrix of Perfectionism, Repetitive Negative Thinking, and Burnout Measures (N=126)

1 Table 1. *Descriptive Statistics and Correlation matrix of Perfectionism, Repetitive Negative Thinking, and Burnout Measures (N=126)*

Measure	Mean(SD)	α	1	2	3	4	5	6	7	8
1. Perfectionistic Concerns	11.25 (3.61)	.78	1	.48**	.45**	.52**	.23**	.38**	.01	.16
2. Perfectionistic Strivings	13.68 (3.76)	.88		1	.25**	.22**	-.10	-.11	.12	-.01
3. Repetitive Negative Thinking	34.94 (8.89)	.94			1	.48**	.22*	.35**	-.11	.06
4. Burnout Exhaustion	14.98 (4.60)	.81				1	.40**	.58**	-.01	.17
5. Burnout Cynicism	10.56 (4.11)	.85					1	.65**	-.06	.11
6. Burnout Inadequacy	7.54 (2.45)	.54						1	-.01	.12
7. Age	23.64 (7.86)	-							1	-.01
8. Gender	-	-								1

2 *p<.05; **p<.01

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