
Perfectionism, Rumination, Worry, and Depressive Symptoms in Early Adolescents

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Abstract

The present study examined trait perfectionism, automatic perfectionistic thoughts, rumination, worry, and depressive symptoms in early adolescents. A group of 81 elementary school students in Grades 7 and 8 completed 5 questionnaires: the Child-Adolescent Perfectionism Scale, the Perfectionism Cognitions Inventory, the Children's Response Styles Questionnaire, the Penn State Worry Questionnaire for Children, and the Center for Epidemiologic Studies Depression Scale. The correlational results revealed associations between both trait perfectionism and perfectionistic automatic thoughts and the indices of depression and worry. Rumination was associated with perfectionistic automatic thoughts, self-oriented perfectionism, depression, and worry. Tests of mediation indicated that rumination mediated the association between perfectionism and depressive symptoms, thus highlighting the role of maladaptive forms of cognitive reactivity in perfectionism. The findings suggested that perfectionistic children and youth are at-risk due to cognitive vulnerabilities and they should benefit from programs focused jointly on reducing perfectionism, associated cognitive tendencies, and susceptibility to depression and worry.

Résumé

La présente étude a examiné le trait du perfectionnisme, les pensées perfectionnistes automatiques, la rumination, l'inquiétude et les symptômes dépressifs chez les jeunes

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adolescents. Un groupe de 81 élèves de 7^e et 8^e années du primaire a rempli cinq questionnaires : le *Child-Adolescent Perfectionism Scale*, le *Perfectionism Cognitions Inventory*, le *Children's Response Styles Questionnaire*, le *Penn State Worry Questionnaire for Children* et le *Center for Epidemiologic Studies Depression Scale*. Les résultats corrélacionnels de cette étude ont révélé des associations entre le trait du perfectionnisme et les pensées automatiques perfectionnistes et les indices de la dépression et de l'inquiétude. La rumination a été associée à des pensées automatiques perfectionnistes et le perfectionnisme orienté vers soi, la dépression et l'inquiétude. Des tests de médiation ont montré que la rumination médiatise l'association entre le perfectionnisme et les symptômes dépressifs, soulignant ainsi le rôle de la réactivité cognitive perfectionniste inadaptée. Les résultats suggèrent que les enfants et les jeunes perfectionnistes sont à risque en raison de vulnérabilités cognitives et qu'ils devraient bénéficier de programmes axés conjointement sur la réduction du perfectionnisme, les tendances cognitives associées et la susceptibilité à la dépression et à l'inquiétude.

Keywords

perfectionism, children, adolescents, rumination, depression, worry, anxiety

The desires to succeed, set goals, and achieve these goals are all commonly revered facets of life, but the reality is that goals are often not attained, especially when they are unrealistic. For many people, failure and success can coexist throughout life in a balanced fashion without posing a problem or threatening the potential to thrive and succeed. In contrast, others place a very high premium on success and the attainment of perfection; as a result, unreasonably high standards are set and failure to meet these standards results in psychological distress. Indeed, perfectionism stemming from the self or prescribed by other people has been linked with various forms of psychological distress, including anxiety, depression, and associated mental states (see Flett & Hewitt, 2002).

Although there has been exponential growth in research on perfectionism in recent years, numerous issues in the perfectionism field remain to be examined, especially in terms of the nature, correlates, and consequences of perfectionism in children. There is increasing evidence that perfectionism in children and youth is associated with a host of adjustment difficulties and related problems, including psychological distress and suicide ideation (Hewitt, Newton, Flett, & Callander, 1997; Huggins, Davis, Rooney, & Kane, 2008) and eating disorder symptoms (Castro et al., 2004; McVey, Pepler, Davis, Flett, & Abdolell, 2002). This proneness to distress and dysfunction is due, in part, to the tendency for perfectionistic students to strive in a driven manner for absolute perfection rather than excellence as well as their tendency to self-critically evaluate themselves according to stringent standards. A recent investigation by Stornelli, Flett, and Hewitt (2009) highlighted the risks inherent in this personality style by examining perfectionism, academic achievement, and affect in a sample of 223 school-aged children from regular, gifted, and arts programs in Grade 4 or Grade 7.

There were few significant links between perfectionism and actual achievement on a standardized measure, but both self-oriented and socially prescribed perfectionism were associated with elevated levels of fear and sadness, thus highlighting the affective consequences of perfectionism.

The current study addressed three interrelated issues about the nature of perfectionism in early adolescents. First, we reexamined the link between perfectionism and depression in elementary school students. Although trait perfectionism and depression have been assessed extensively in children and adolescents and links have been established (e.g., Flett, Hewitt, & Cheng, 2008; Hewitt et al., 2002), research is just beginning on perfectionistic automatic thoughts and distress in children and adolescents. Flett, Hewitt, Blankstein, and Gray (1998) postulated that perfectionists experience automatic thoughts reflecting the need to be perfect and their sense that perfection is not being attained. They showed in various samples of university students that the measure created to tap this component of the perfectionism construct, the Perfectionism Cognitions Inventory, is associated uniquely with psychological distress. A recent investigation extended this research by focusing on perfectionistic automatic thoughts among adolescents in high school. Flett et al. (in press) examined perfectionistic automatic thoughts in two samples of high school students (mean age of approximately 16 years old) and established that the scores on the Perfectionism Cognitions Inventory were correlated with self-reported depressive symptoms, negative automatic thoughts, and trait self-criticism. Hierarchical regression analyses confirmed the unique predictive role of perfectionistic automatic thoughts in depression. However, this finding needs to be replicated by extending this research to a much younger sample of early adolescents, and this was a key purpose of the current study.

Second, the current study examined the association between perfectionism and pathological worry in early adolescents. Although there is still limited knowledge about the nature of worry in children and adolescents, accumulating evidence suggests that severe worry in children and adolescents is deleterious to functioning and can have negative long-term consequences (see Cartwright-Hatton, 2006; Kertz & Woodruff-Borden, 2011). Children suffering from excessive worry have a sense that worry is uncontrollable, and they are unable to tolerate uncertainty (Boelen, Vrinssen, & van Tulder, 2010).

An association between perfectionism and worry in young children in the current study would be in keeping with suggestions that perfectionists are prone to have an anxious temperament and may have been exposed to overanxious parenting that have amplified concerns about the consequences of making mistakes and not meeting expectations (see Flett, Hewitt, Oliver, & Macdonald, 2002). Worry has been linked empirically with trait perfectionism in university students (e.g., Buhr & Dugas, 2006), but, to our knowledge, the association between perfectionism and worry per se in younger people has not been tested. However, more general research has linked perfectionism with anxiety in children and adolescents. Initial evidence of a link was provided by Hewitt et al. (2002). As part of a broader investigation, they investigated the link between the Child-Adolescent Perfectionism Scale and the Children's Manifest Anxiety Scale-Revised in a sample of 114 children and adolescents. Both

self-oriented and socially prescribed perfectionism were correlated significantly with anxiety. More recently, Essau, Leung, Conradt, Cheng, and Wong (2008) examined perfectionism and anxiety in more than 1,000 adolescent students from Hong Kong and Germany. Total anxiety symptom scores on the Spence Child Anxiety Scale were associated with both self-oriented and socially prescribed perfectionism in the students from Hong Kong and from Germany (r 's ranging from .22 to .36). Whereas these previous studies focused on perfectionism and anxiety, the current investigation assessed the association between perfectionism and uncontrollable worry in early adolescents. Another unique aspect of the current work is that we focused jointly on trait perfectionism and perfectionistic automatic thoughts. We anticipated that in keeping with limited research on trait perfectionism and worry in university students (see Blankstein & Lumley, 2008; Buhr & Dugas, 2006), it was predicted that self-reported levels of pathological worry would be linked with self-oriented perfectionism and socially prescribed perfectionism as well as with perfectionistic automatic thoughts.

Finally, the current study sought to establish potentially significant links between perfectionism and depressive rumination in early adolescents. Nolen-Hoeksema (1991), in her influential response styles theory of depression, sought to account for gender differences in depression by hypothesizing that the way in which a person responds to depressive symptoms predicts the duration and severity of these symptoms. More recently, this theory has been amended in light of findings indicating that it is more relevant to the onset of depressive symptoms (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Nolen-Hoeksema identified three possible response styles—rumination, distraction, and problem solving—with rumination being the key element. A person with a ruminative response style reacts to depressive symptoms by focusing on and brooding about the negative mood and the perceived impact that the depressive symptoms and negative mood will have. This only serves to prolong and amplify feelings of dysphoria. Extensive evidence attests to the links between rumination and depression in adults and children and adolescents. For instance, Abela, Brozina, and Haigh (2002) found that rumination indeed predicted an increase in depressive symptoms over a 6-week period in a group of students in the third and seventh grades. Thus, research supports the association between rumination and an increased level of depressive symptoms as well as the potential predictability of future levels of depressive symptoms in adolescents (also see Hilt, McLaughlin, & Nolen-Hoeksema, 2010; Kuyken, Watkins, Holden, & Cook, 2006; Muris, Fokke, & Kwik, 2009). This has been confirmed in recent reviews (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010). Indeed, a recent meta-analysis summarized the results from 17 studies (with 19 samples in total; see Rood, Roelofs, Bogels, Nolen-Hoeksema, & Schouten, 2009). Their meta-analysis found that rumination is linked both cross-sectionally and longitudinally with depression in children and adolescents. Recently, rumination has been identified as a key factor that accounts for the development of depression among those girls and boys making the transition from early to middle adolescence (Abela & Hankin, 2011). Rumination has also been associated with worry, but detailed analyses

indicate that rumination and worry are distinguishable constructs (Muris, Roelofs, Meesters, & Boomsma, 2004).

How does perfectionism relate to rumination? Perfectionists may be preoccupied with past mistakes and negative feelings that connote that they are not perfect and their lives are not perfect. Several empirical studies with adult participants have examined perfectionism and rumination, and it has been found consistently that both self-oriented and socially prescribed perfectionism are associated with elevated rumination (e.g., Blankstein & Lumley, 2008; Flett, Madorsky, Hewitt, & Heisel, 2002; O'Connor, O'Connor, & Marshall, 2007). Moreover, initial tests indicate that rumination serves as a full or partial mediator of the link between perfectionism and depression (Harris, Pepper, & Maack, 2008; O'Connor et al., 2007). However, the possible association between perfectionism and rumination has not been studied in children and adolescents, with the exception of a recent study that linked perfectionistic dysfunctional attitudes with depression in high school students. In this investigation, McWhinnie, Abela, Knauper, and Zhang (2009) established a link between rumination and a less direct measure of perfectionism called the Revised Children's Dysfunctional Attitudes Scale in a group of children with participants ranging in age from 6 to 14 years. To our knowledge, rumination and trait perfectionism (self-oriented and socially prescribed perfectionism) have not been evaluated thus far in a study with children or adolescents. Similarly, the association between the Perfectionism Cognitions Inventory and rumination has not been evaluated in children or adolescents.

Hypotheses of the Current Study

In light of the need for additional research and the past investigations described above, several interrelated hypotheses were tested in the current study:

Hypothesis 1: Both perfectionistic automatic thoughts and trait perfectionism would be associated significantly with depression and worry in early adolescents.

Hypothesis 2: Perfectionistic automatic thoughts and trait perfectionism would be linked significantly with rumination but not with a second factor tapping distraction and problem solving, similar to past research with adults Flett, Madorsky, Hewitt, & Heisel (2002).

Hypothesis 3: Rumination would mediate, in whole or in part, the link between perfectionism and depressive symptoms based on research with adults supporting this mediational model (e.g., Harris et al., 2008; O'Connor et al., 2007) and related analyses emphasizing the vulnerability inherent in the tendency for perfectionists to ruminate (Olson & Kwon, 2008). Evidence linking perfectionism with rumination and showing that rumination is a mediator of the link between perfectionism and depression in early adolescents would be in keeping with the notion that perfectionists are vulnerable to depression, in part, because of maladaptive cognitive styles and cognitive tendencies that

become activated when stressors and setbacks are experienced (for a discussion, see Hewitt & Flett, 1991).

Method

Participants

The sample consisted of 81 participants (44 girls, 37 boys) with a mean age of 12.80 years ($SD = 0.67$). The participants were Grade 7 and 8 students from an elementary school in North York, Ontario. In accordance with policies in Ontario, additional information about the cultural background of our participants was not acquired.

Procedure

Each student received one consent form to be filled out by a parent or guardian providing consent to participation and another to be filled out personally by the participant at the time of data collection. Those who had their parental consent forms and provided their own consent completed by the day the study was conducted participated. The students received a package of five separate questionnaires and a covering demographic sheet. The package was completed during class time under the supervision of one of the researchers and the classroom teacher. The participants were reminded that their answers were completely confidential and that they were able to terminate their participation at any time. Upon group completion of questionnaires, students were debriefed with respect to the goals of the current study. Finally, students were given cookies as a small token of appreciation for their participation.

Measures

Child-Adolescent Perfectionism Scale. The CAPS (Flett, Hewitt, Boucher, Davidson, & Munro, 1997) is a 22-item measure of perfectionism that assesses self-oriented perfectionism (e.g., "I try to be perfect in everything I do"), and socially prescribed perfectionism (e.g., "There are people in my life who expect me to be perfect") in children with a minimum Grade 3 reading level. The CAPS has been used in several investigations (e.g., Flett et al., 1997; Hewitt et al., 2002). Extensive evidence attests to the reliability and the validity of the CAPS subscales. For instance, Hewitt et al. (2002) found with a sample of 114 Canadian school children and adolescents that the respective alphas were .85 and .86 for self-oriented and socially prescribed perfectionism, respectively. Stornelli et al. (2009) found alphas of .85 and .85 for a mixed sample of gifted and nongifted children, whereas Flett, Panico, and Hewitt (2011) reported alphas of .85 and .83 for the self-oriented and socially prescribed perfectionism subscales, respectively, for a sample of high school participants.

Perfectionism Cognitions Inventory (PCI; Flett et al., 1998). The Perfectionism Cognitions Inventory evaluates perfectionism from a unique cognitive perspective (Enns & Cox, 2002).

The PCI assess the frequency of perfectionistic automatic thoughts over the past week. The 25-item, self-report questionnaire includes various statements reflecting perfectionism cognitions such as “I can’t stand to make mistakes,” and “I should be perfect.” Analyses of data obtained from adolescents confirmed that the PCI in adolescents consists of one factor with a high degree of internal consistency ($\alpha = .91$) and scores on the PCI are correlated significantly with trait perfectionism (Flett et al., in press).

Children’s Response Styles Questionnaire (CRSQ; Abela et al., 2002; Abela, Vanderbilt, & Rochon, 2004). The CRSQ is the children’s version of Nolen-Hoeksema’s Response Styles Questionnaire. The scale is used to assess the response styles to depressive symptoms in children. It consists of 21 items and requires children to indicate their responses ranging from *almost never* to *almost always*. One example item is, “When I am sad, I think about all my failures, faults, and mistakes.” The measure consists of three subscales: the ruminative response subscale, the problem-solving response subscale, and the distracting response subscale. Past research using the CRSQ has demonstrated that it has moderate internal consistency with alphas ranging from .57 to .84 (Abela et al., 2002).

Penn State Worry Questionnaire for Children (PSWQ-C; Chorpita, Tracey, Brown, Collica, & Barlow, 1997). This 14-item self-report measure assesses pathological worry in children. Children select their responses to statements such as, “Many things make me worry,” and “I am always worrying about something,” from *never true* to *always true*. The measure has been found to possess favorable reliability and validity (Chorpita et al., 1997), and elevated worry scores are related to diagnoses of generalized anxiety disorder in children (Muris, Meesters, & Gobel, 2001).

Centre for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item measure used to assess symptoms of depression. Respondents are asked to select the occurrence of behaviors and feelings reflecting depression in the past week. One example of an item is, “I felt sad.” Responses range from *rarely or none of the time* (0) to *most or all of the time* (3). The CES-D has high internal consistency and validity (Radloff, 1977).

Results

The means, standard deviations, and alphas for each variable examined are displayed in Table 1. The mean CES-D score of 21.09 suggests that there was substantial distress among our participants given that scores of 16 or higher represent mild to moderate levels of depression (Radloff, 1977). The mean worry score was only slightly lower than the mean score of 18.27 reported originally by Chorpita et al. (1997). The psychometric results involving the PCI showed that the measure had adequate internal consistency in this sample ($\alpha = .86$). The PCI mean of 45.35 is virtually identical to the mean scores reported in Flett et al. (in press).

Pearson correlations were computed among perfectionism cognitions, self-oriented perfectionism, socially prescribed perfectionism, worry, rumination, distracting and

Table 1. Descriptive Statistics (Means, Standard Deviations, and Reliability Coefficients)

Measure	<i>M</i>	<i>SD</i>	α
PCI	45.35	14.61	.86
CAPS-SOP	32.72	8.33	.82
CAPS-SPP	28.53	8.80	.85
CRSQ-Rumination	29.00	8.21	.87
CRSQ-Distraction and Problem Solving	17.33	4.39	.69
PSWQ-C	16.62	9.06	.89
CES-D	21.09	10.72	.86

Note: The following abbreviations were used: PCI (Perfectionism Cognitions Inventory), CAPS-SOP (Child-Adolescent Perfectionism Scale Self-Oriented Perfectionism subscale), CAPS-SPP (Child-Adolescent Perfectionism Scale Socially Prescribed Perfectionism subscale), CRSQ-Rumination (Children's Response Styles Questionnaire Rumination subscale), CRSQ-Distraction and Problem-Solving subscale, PSWQ-C (Penn State Worry Questionnaire for Children), and CES-D (Center for Epidemiologic Studies Depression Scale).

Table 2. Correlations Between Dimensions of Perfectionism, Rumination, Distraction and Problem-Solving, Rumination, and Depressive Symptoms

Measures	1	2	3	4	5	6	7
1. PCI	—	.62**	.51**	.36**	.39**	.37**	.15
2. SOP		—	.45**	.24*	.33**	.31**	.07
3. SPP			—	.30**	.30**	.19	-.02
4. CES-D				—	.60**	.70**	-.18
5. PSWQ-C					—	.61**	-.01
6. CRSQ-Rumination						—	.07
7. CRSQ-D-PS							—

Note: The following abbreviations were used: PCI (Perfectionism Cognitions Inventory), SOP (Self-Oriented Perfectionism), SPP (Socially Prescribed Perfectionism), CES-D (Centre for Epidemiologic Studies Depression Scale), PSWQ-C (Penn State Worry Questionnaire for Children), CRSQ-Rumination (Children's Response Styles Questionnaire Rumination Subscale), and CRSQ-D-PS (Children's Response Styles Questionnaire Distraction and Problem-Solving Subscale).

* $p < .05$, ** $p < .01$ (two tailed).

problem-solving responses, and depressive symptoms. The results are displayed in Table 2. It can be seen that all three perfectionism dimensions (i.e., perfectionistic automatic thoughts, self-oriented perfectionism, and socially prescribed perfectionism) were correlated significantly with depression and worry. Strong positive associations were found between the PCI and the trait dimensions of perfectionism.

Further inspection indicated that the PCI was correlated significantly with rumination, $r = .37$, but not with distraction. Rumination was also correlated significantly

Table 3. Regression Analyses: Rumination as a Mediator Between Perfectionism Cognitions and Depressive Symptoms

Mediation steps	Predictor(s)
Step 1: Perfectionism cognitions (PC) predicting to depression $R^2 = .13, F(1, 80) = 11.70, p < .001$	PC $\beta = .36, t(81) = .26, p < .05$
Step 2: PC predicting to rumination $R^2 = .13, F(1, 80) = 12.28, p < .001$	PC $\beta = .37, t(81) = 3.50, p < .001$
Step 3: Rum. predicting to depression $R^2 = .49, F(1, 80) = 75.85, p < .001$	Rumination $\beta = .70, t(81) = 8.71, p < .001$
Step 4: PC and Rum. predicting to depression $R^2 = .49, F(1, 79) = 39.30, p < .001$	Rumination $\beta = .66, t(80) = 7.64, p < .001$ PC $\beta = .12, t(80) = 1.38, p = .17$

Note: The following abbreviations were used: PC (Perfectionism Cognitions), and Rum (Rumination).

with self-oriented perfectionism, but somewhat surprisingly, it was not correlated significantly with socially prescribed perfectionism in this sample.

As might be expected, the strongest correlation was found between rumination and depressive symptoms. Furthermore, worry was correlated highly with rumination as well as with depressive symptoms.

Tests of Mediation

Baron and Kenny’s mediation model was used in order to analyze the mediating effect of rumination in perfectionism cognitions and depressive symptoms. The results are summarized in Table 3. The mediation analysis was conducted using perfectionism cognitions as the predictor, rumination as the mediator, and depressive symptoms as the outcome. Three independent regression analyses were performed. In the first regression analysis, the relationship between the predictor (perfectionism cognitions) and the outcome (depressive symptoms) was evaluated. A significant positive relationship was demonstrated, $\beta = .36, p < .05$. Next, the relationship between the predictor (perfectionism cognitions) and the mediator (rumination) was evaluated. The results of this regression analysis demonstrated that this relation was significant, $\beta = .37, p < .001$. The third step was conducted to determine whether there was a significant relationship between the mediator (rumination) and the outcome (depressive symptoms). The results from this regression analysis indicated that this relationship was also significant, $\beta = .70, p < .001$. Mediation is considered to occur if the predictor (perfectionism cognitions) has no effect on the outcome (depressive symptoms) when controlling for the mediator (rumination; Baron & Kenny, 1986). To determine this, a final regression analysis was conducted in which the rumination measure was entered first followed by perfectionism cognitions, with depressive symptoms as the

outcome. The results demonstrated that rumination was a significant predictor of depressive symptoms ($\beta = .66, p < .001$), but the perfectionism cognitions measure was no longer a significant predictor of depressive symptoms after controlling for rumination, $\beta = .12, p = .17$. Thus, rumination fully mediated the relationship between perfectionism cognitions and depressive symptoms. These findings support the second hypothesis of the current study.

Similar results were obtained when the CAPS self-oriented perfectionism subscale was used rather than the PCI.

Discussion

The current study was designed to evaluate the associations among perfectionism, rumination, depression, and worry in a sample of students in Grades 7 and 8. Perfectionism was assessed not only with trait measures but also with a measure of perfectionistic automatic thoughts. Psychometric analyses indicated that the PCI had adequate reliability when administered to early adolescents and scores on the PCI were associated positively with elevated scores on the trait perfectionism dimensions. Thus, early adolescents who are perfectionists tend to experience frequent automatic thoughts about the need to be perfect. Additional descriptive analyses indicated that levels of perfectionistic automatic thoughts were comparable to those obtained with high school students. Also, levels of depression were elevated substantially among our participants.

Regarding more substantive issues, in line with our first hypothesis, perfectionism was correlated significantly with depression in this sample. Perfectionistic automatic thoughts, self-oriented perfectionism, and socially prescribed perfectionism were all correlated significantly with depressive symptoms. The results with the PCI established that perfectionistic automatic thoughts are linked significantly with depression among early adolescents. The association between perfectionistic thoughts and depression accords with findings obtained with older high school students (Flett et al., in press) and suggests that dispositional perfectionism and more state-like perfectionistic thoughts are implicated in the depression experienced by elementary school students. The significant association between socially prescribed perfectionism and depression accords with past findings with children and adolescents (e.g., Hewitt et al., 2002) and supports suggestions that perceived or actual exposure to unrealistic standards and expectancies imposed on the self by significant others can contribute to significant distress (see Costigan, Hua, & Su, 2010).

Similarly, all three perfectionism dimensions were associated with elevated levels of uncontrollable worry. The strongest association between perfectionism and worry was found with the PCI, thus highlighting the role of chronically activated perfectionistic thoughts in uncontrollable worry. Given that the experience of worry is often focused on the future and things that could happen or might happen, much of this association is likely a reflection of fear of failure and anticipated mistakes that may never actually occur. Future research should examine some of the factors and processes that

contribute to this link. It is possible, for instance, that perfectionistic students share the belief that worry is beneficial because it helps ward off negative future occurrences such as making embarrassing mistakes (see Gosselin *et al.*, 2007).

One of our central hypotheses was that trait perfectionism and the PCI would be linked with rumination, but not with the distraction and problem-solving factor. The data were generally consistent with this hypothesis. There were significant associations between rumination and levels of perfectionistic automatic thoughts and self-oriented perfectionism. These results extend recent data linking rumination in adolescents and perfectionistic dysfunctional attitudes (see McWhinnie *et al.*, 2009). Also, as expected, there were no significant associations between the perfectionism measures and the distraction and problem-solving factor. The association between perfectionism and rumination suggested that perfectionistic students who strive for perfection and who are cognitively preoccupied with the need to be perfect also ruminate extensively about their feelings of depression and perhaps brood about past mistakes and events that may have contributed to their initial distress. That is, they have a tendency to dwell on how they are feeling and ways in which they themselves and their lives are not perfect. This tendency to ruminate combined with the tendency to worry suggests that certain young perfectionists may be unable to concentrate effectively on schoolwork when feelings of anxiety and dysphoria are being experienced. Another implication of our results is that when seeking to examine the developmental origins of rumination, personality factors such as perfectionism should be considered as possible contributing factors, given that substantially more work is needed on the developmental origins of rumination. Greater understanding of how and why young perfectionists are elevated in ruminative brooding could prove quite informative.

It is important to qualify our observations because one unexpected finding was that socially prescribed perfectionism was not associated with rumination in the current sample. The lack of a significant association in the present study between socially prescribed perfectionism and rumination is surprising given that socially prescribed perfectionism has been linked with various indices of maladaptive coping and associated levels of psychological distress in adult samples. Accordingly, we have reexamined this association in a recent follow-up investigation with early adolescents (Flett, Coulter, & Hewitt, 2011), and we found that, once again, self-oriented perfectionism was associated significantly with rumination and there was a slightly lower positive correlation that was only marginally significant between socially prescribed perfectionism and rumination. It is quite plausible that the link between socially prescribed perfectionism and rumination becomes more robust as psychosocial stressors and challenges become increasingly evident throughout the adolescent period.

A central purpose of this study was to evaluate the applicability of a mediational model linking perfectionism, rumination, and depression in early adolescents. Of course, this could only be evaluated with the indices of perfectionism that were associated significantly with rumination in the current study (*i.e.*, self-oriented perfectionism, perfectionistic automatic thoughts). The pattern of findings did indeed yield indications that rumination mediates the relationship between perfectionism and

depression, demonstrating the potentially important role that rumination plays in the relationship between perfectionism and depressive symptoms. This outcome was expected based on past perfectionism research employing the mediational model of rumination in adults (e.g. O'Connor et al., 2007). These findings are noteworthy, in part, because the possibility that rumination contributes to the link between perfectionism and depression in early adolescents has not been assessed to our knowledge. The current results further attest to the deleterious nature of the ruminative response style but also suggest that certain perfectionistic students may be at risk for substantial psychological distress unless preventive efforts and treatment interventions address the cognitive vulnerabilities that may make life difficult for ruminating perfectionists who are also likely to have a propensity to worry. General support has been obtained for diathesis-stress models of perfectionism, coping, and depression (see Hewitt & Flett, 2002), and it is quite likely that the experience of significant life stressors and setbacks will have a substantial impact on perfectionistic individuals who evaluate themselves by perfectionistic standards and who tend to have maladaptive cognitive styles.

Implications for Treatment and Preventive Interventions

Collectively, our findings suggest that perfectionistic adolescents suffering from distress, worry, and associated tendencies (i.e., the ruminative response style) are in need of interventions that specifically address the perfectionism that is at the root of their difficulties. A key point to underscore here is that it is important to supplement more general interventions with a specific emphasis on targeting perfectionism. That is, interventions need to be tailored to address core perfectionism themes. Specific suggestions include addressing the perfectionist's need for self-acceptance (see Lundh, 2004) and highlighting the distinction between striving for excellence as opposed to striving for absolute perfection. Ellis (2002) emphasized that dysfunctional perfectionism is due to perfection becoming irrationally important along with a tendency to overreact and engage in catastrophizing when mistakes are made, and Rudolph, Flett, and Hewitt (2007) confirmed that these tendencies are linked with the perfectionistic automatic thoughts that were associated with depression in the current study of early adolescents. Cognitive-behavioral and rational-emotive interventions designed to change these cognitive tendencies are needed and may require extensive treatment in light of the difficulties associated with reducing levels of perfectionism (Blatt & Zuroff, 2002). A recent study by Nobel, Manassis, and Wilansky-Traynor (in press) not only offers hope in this regard but also illustrates the challenges involved. To our knowledge, this study is the first empirical attempt to reduce levels of perfectionism by exposing at-risk school-aged children to a school-based cognitive-behavioral intervention. The results of this study were encouraging but not entirely successful in that it was found that both the cognitive-behavioral intervention and the comparison intervention (i.e., a structured activity group) were associated with significant reductions in levels of self-oriented perfectionism as well as levels of anxiety and depression. Reductions were not found in levels of socially prescribed perfectionism. In addition,

it was found that pretreatment levels of self-oriented perfectionism influenced post-treatment depression scores, suggesting that elevated perfectionism interferes with positive treatment outcomes among children. Overall, this study does provide us with the hope that early intervention and prevention efforts can result in reductions in self-oriented perfectionism among certain distress-prone children while also reminding us that self-oriented perfectionism can be difficult to lessen in certain children. Indeed, the tendency for perfectionism to impede CBT treatment progress among perfectionistic adolescents was illustrated in a recent case example described by Manassis. Manassis described the course of treatment for an adolescent girl suffering from clinical anxiety. Good progress was made after 14 CBT sessions, but there were still times when the girl felt overwhelmed and anxious. These setbacks were attributed to perfectionism and rigid thinking that was part of “an emerging personality style” (Manassis, 2009, p. 158). These observations point to the need for a specific and comprehensive focus on perfectionism as a key part of interventions for children and youth.

The difficulties in reducing levels of perfectionism is not altogether surprising in that a tendency to be perfectionistic is likely a relatively enduring aspect of personality that reflects the perfectionist’s sense of identity. Other data on the stability of cognitive vulnerability factors in depression indicate that rumination is relatively stable in children but less so than other cognitive vulnerability factors linked with depression (see Hankin, 2008). This suggests that an early prevention focus on the perfectionism and rumination link in children and early adolescents could have promise. An important first step is to make young perfectionists aware of the potential costs and pitfalls associated with this personality style. In this regard, a recent study with university students found that simply making perfectionistic students more aware of their perfectionism had a substantial positive impact (see Aldea, Rice, Gormley, & Rojas, 2010). Age-appropriate materials such as books with stories about how no one is perfect (Burns, 2008) and that “okay is okay” and “good enough is good enough” (see Rosenthal & Lichtenfeld, 2007) start to promote and reinforce the message that there is a difference between doing one’s best and striving for excellence instead of pursuing impossible standards and trying to live up to demands to be perfect. An emphasis on creating and sustaining positive emotional experiences is also advisable.

Limitations of the Current Study

Although the current study yielded some unique information and insights, the results must be interpreted with the context of some key limitations. First, and foremost, our study was correlational in nature, thereby precluding causal statements. An important direction for future research would be a multistage longitudinal investigation of perfectionism, rumination, depression, and worry. Given recent evidence showing that rumination predicts subsequent depression in middle adolescence (Abela & Hankin, 2011), a longitudinal study that focuses specifically on perfectionism and rumination in the development of depression seems essential. In terms of other limitations, it is also important to note that our sample was relatively small, and this precluded some

potentially interesting and meaningful analyses, such as a detailed comparison of these issues in boys versus girls. Clearly, our tests of mediators would be more meaningful and appropriate if conducted with larger samples. Finally, the current findings may not be specific to perfectionism, and future research should examine perfectionism in the context of other personality vulnerabilities (e.g., neuroticism).

In summary, the results of the current study demonstrated that perfectionism is maladaptive. Trait dimensions of perfectionism and frequent automatic perfectionistic thoughts were associated with pathological worry, rumination, and depressive symptoms in early adolescents. Rumination was identified as a potentially important mediator in the link between aspects of perfectionism and depression. Collectively, our results suggest that perfectionistic students in elementary school should benefit substantially from cognitive-behavioral interventions designed to address levels of psychological distress, including efforts that are focused directly on controlling levels of worry and managing symptoms of anxiety and depression.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

- Abela, J. R. Z., Brozina, K., & Haigh, E.P. (2002). An examination of the response styles theory of depression in third- and seventh- grade children: A short-term longitudinal study. *Journal of Abnormal Child Psychology, 30*, 515-527.
- Abela, J. R. Z., & Hankin, B. L. (2011). Rumination as a vulnerability factor to depression during the transition from early to middle adolescence : A multivariate longitudinal study. *Journal of Personality and Social Psychology, 120*, 259-271.
- Abela, J.R.Z., Vanderbilt, E., & Rochon, A. (2004). A test of the integration of the response styles and social support theories of depression in third and seventh grade children. *Journal of Social and Clinical Psychology, 23*, 653-674.
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across pathology: A meta-analytic review. *Clinical Psychology Review, 30*, 217-237.
- Aldea, M. A., Rice, K. G., Gormley, B., & Rojas, A. (2010). Telling perfectionists about their perfectionism: Effects of providing feedback on emotional reactivity and psychological symptoms. *Behaviour Research and Therapy, 48*, 1194-1203.
- Baron, R. A., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

- Blankstein, K. R., & Lumley, C. H. (2008). Multidimensional perfectionism and ruminative brooding in current dysphoria, anxiety, worry and anger. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, *26*, 168-193.
- Blatt, S. J., & Zuroff, D. C. (2002). Perfectionism in the therapeutic process. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 393-406). Washington, DC: American Psychological Association Press.
- Boelen, P. A., Vrinssen, I., & van Tulder, F. (2010). Intolerance of uncertainty in adolescents: Correlations with worry, social anxiety, and depression. *Journal of Nervous and Mental Disease*, *198*, 194-200.
- Buhr, K., & Dugas, M. J. (2006). Investigating the construct validity of intolerance of uncertainty and its unique relationship with worry. *Journal of Anxiety Disorders*, *20*, 222-236.
- Burns, E. F. (2008). *Nobody's perfect: A story for children about perfection*. Washington, DC: Magination Press.
- Cartwright-Hatton, S. (2006). Worry in childhood and adolescence. In G. L. C. Davey & A. Wells (Eds.), *Worry and its psychological disorders: Theory, assessment, and treatment* (pp. 81-97). New York, NY: John Wiley.
- Castro, J., Gila, A., Gual, P., Lahortiga, F., Saura, B., & Toro, J. (2004). Perfectionism dimensions in children and adolescents with anorexia nervosa. *Journal of Adolescent Health*, *35*, 392-398.
- Chorpita, B. F., Tracey, S. A., Brown, T. A., Collica, T. J., & Barlow, D. H. (1997). Assessment of worry in children and adolescents: An adaptation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy*, *35*, 569-581.
- Costigan, C. L., Hua, J. M., & Su, T. F. (2010). Living up to expectations: The strengths and challenges experienced by Chinese Canadian students. *Canadian Journal of School Psychology*, *25*, 223-245.
- Ellis, A. (2002). The role of irrational beliefs in perfectionism. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research and treatment* (pp. 217-230). Washington, DC: American Psychological Association.
- Enns, M. W., & Cox, B. J. (2002). The nature and assessment of perfectionism: A critical analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research and treatment* (pp. 33-62). Washington, DC: American Psychological Association.
- Essau, C. A., Leung, P. W. L., Conradt, J., Cheng, H., & Wong, T. (2008). Anxiety symptoms in Chinese and German adolescents: Their relationship with early learning experiences, perfectionism, and learning motivation. *Depression and Anxiety*, *25*, 801-810.
- Flett, G. L., Coulter, L.-M., & Hewitt, P. L. (2011). *Trait perfectionism and perfectionistic self-presentation in depression among in elementary school students*. Manuscript in preparation.
- Flett, G. L., & Hewitt, P. L. (2002). *Perfectionism: Theory, research, and treatment*. Washington, DC: American Psychological Association.
- Flett, G. L., Hewitt, P. L., Blankstein, K. R., & Gray, L. (1998). Psychological distress and the frequency of perfectionistic thinking. *Journal of Personality and Social Psychology*, *75*, 1363-1381.
- Flett, G. L., Hewitt, P. L., Boucher, D. J., Davidson, L. A., & Munro, Y. (1997). *The Child-Adolescent Perfectionism Scale: Development, validation, and association with Adjustment*. Unpublished manuscript, York University, Toronto.

- Flett, G. L., Hewitt, P. L., & Cheng, W. M. W. (2008). Perfectionism, distress, and irrational beliefs in high school students: Analyses with an abbreviated Survey of Personal Beliefs for adolescents. *Journal of Rational-Emotive and Cognitive-Behaviour Therapy, 26*, 194-205.
- Flett, G. L., Hewitt, P. L., Dmerjian, A., Sturman, E. D., Sherry, S. B., & Cheng, W. (in press). Perfectionistic automatic thoughts and psychological distress in adolescents: An analysis of the Perfectionism Cognitions Inventory. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*.
- Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.). *Perfectionism: Theory, research, and treatment* (pp. 89-132). Washington, DC: American Psychological Association Press.
- Flett, G. L., Madorsky, D., Hewitt, P. L., & Heisel, M. J. (2002). Perfectionism cognitions, rumination, and psychological distress. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 20*, 33-47.
- Flett, G. L., Panico, T., & Hewitt, P. L. (2011). Perfectionism, Type A behavior, and self-efficacy in depression and health symptom among adolescents. *Current Psychology, 30*, 105-116.
- Gosselin, P., Langlois, F., Freeston, M. H., Ladouceur, R., Laberge, M., & Lemay, D. (2007). Cognitive variables related to worry among adolescents: Avoidance strategies and faulty beliefs about worry. *Behaviour Research and Therapy, 45*, 225-233.
- Hankin, B. L. (2008). Stability of cognitive vulnerabilities to depression: A short-term prospective multiwave study. *Journal of Abnormal Psychology, 117*, 324-353.
- Harris, P. W., Pepper, C. M., & Maack, D. J. (2008). The relationship between maladaptive perfectionism and depressive symptoms: The mediating role of rumination. *Personality and Individual Differences, 44*, 150-160.
- Hewitt, P. L., Caelian, C. F., Flett, G. L., Sherry, S. B., Collins, L., & Flynn, C. A. (2002). Perfectionism in children: Associations with depression, anxiety, and anger. *Personality and Individual Differences, 32*, 1049-1061
- 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.
- Hewitt, P. L., & Flett, G. L. (2002). Perfectionism and stress in psychopathology. In G. L. Flett & P. L. Hewitt (Eds.). *Perfectionism: Theory, research, and treatment* (pp. 255-284). Washington, DC: American Psychological Association Press.
- Hewitt, P. L., Newton, J., Flett, G. L., & Callander, L. (1997). Perfectionism and suicide ideation in adolescent psychiatric patients. *Journal of Abnormal Child Psychology, 25*, 95-101.
- Hilt, L. M., McLaughlin, K. A., & Nolen-Hoeksema, S. (2010). Examination of the response styles theory in a community sample of young adolescents. *Journal of Abnormal Child Psychology, 38*, 545-556.
- Huggins, L., Davis, M. C., Rooney, R., & Kane, R. (2008). Socially prescribed and self-oriented perfectionism as predictors of depressive diagnosis in preadolescents. *Australian Journal of Guidance and Counselling, 18*, 182-194.

- Kertz, S. J., & Woodruff-Borden, J. (2011). The developmental psychopathology of worry. *Clinical Child and Family Psychology Review, 14*, 174-197.
- Kuyken, W., Watkins, E., Holden, E., & Cook, W. (2006). Rumination in adolescents at risk for depression. *Journal of Affective Disorders, 96*, 39-47.
- Lundh, L.-G. (2004). Perfectionism and acceptance. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 22*, 255-269.
- Manassis, K. (2009). *Cognitive-behavioral therapy with children: A guide for the community practitioner*. New York, NY: Routledge.
- McVey, G. L., Pepler, D., Davis, R., Flett, G. L., & Abdoell, M. (2002). Risk and protective factors associated with disordered eating during early adolescence. *Journal of Early Adolescence, 22*, 75-95.
- McWhinnie, C. M., Abela, J. R. Z., Knauper, B., & Zhang, C. (2009). Development and validation of the revised Children's Dysfunctional Attitudes Scale. *British Journal of Clinical Psychology, 48*, 287-308.
- Muris, P., Fokke, M., & Kwik, D. (2009). The ruminative response style in adolescents: An examination of its specific link to symptoms of depression. *Cognitive Therapy and Research, 33*, 21-32.
- Muris, P., Meesters, C., & Gobel, M. (2001). Reliability, validity, and normative data of the Penn State Worry Questionnaire in 8-12-yr-old children. *Journal of Behavior Therapy and Experimental Psychiatry, 32*, 63-72.
- Muris, P., Roelofs, J., Meesters, C., & Boomsma, P. (2004). Rumination and worry in nonclinical adolescents. *Cognitive Therapy and Research, 28*, 539-554.
- Nobel, R., Manassis, K., & Wilansky-Trainor, P. (in press). The role of perfectionism in relation to an intervention to reduce anxious and depressive symptoms in children. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*, 569-582.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3*, 400-424.
- O'Connor, D. B., O'Connor, R. C., & Marshall, R. (2007). Perfectionism and psychological distress: Evidence of the mediating effects of rumination. *European Journal of Personality, 21*, 429-452.
- Olson, M. L., & Kwon, P. (2008). Brooding perfectionism: Refining the roles of rumination and perfectionism in the etiology of depression. *Cognitive Therapy Research, 32*, 788-802.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Rood, L., Roelofs, J., Bogels, S. M., Nolen-Hoeksema, S., & Schouten, E. (2009). The influence emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review, 29*, 607-616.
- Rosenthal, A. K., & Lichtenfeld, T. (2007). *The OK book*. Toronto, Ontario, Canada: HarperCollins Canada.
- Rudolph, S. G., Flett, G. L., & Hewitt, P. L. (2007). Perfectionism and deficits in cognitive emotion regulation. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 25*, 343-357.

Stornelli, D., Flett, G. L., & Hewitt, P. L. (2009). Perfectionism, achievement, and affect in children: A comparison of students from gifted, arts, and regular programmes. *Canadian Journal of School Psychology, 24*, 267-283.

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