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The impact of internet-based cognitive behavior therapy for perfectionism: a reinterpretation through the lens of the Model of Excellencism and Perfectionism

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Abstract

Background: Grieve *et al.* (2022) tested the effects of an intervention designed to reduce perfectionism. Contrary to their hypotheses, the intervention reduced both perfectionism and excellencism. Furthermore, excellencism positively correlated with negative outcomes (e.g. anxiety).
Aims: A theory-driven framework (with five hypothetical scenarios) is proposed to reconsider how we interpret the effectiveness of interventions designed to reduce perfectionism. Our goal was to offer a constructive reinterpretation of the results of Grieve *et al.* (2022) using our new framework derived from the Model of Excellencism and Perfectionism.
Method: Secondary data analyses using the experimental and correlational results are published in the randomized control trial of Grieve *et al.* (2022).
Results: Our re-examination of the results reveals that excellencism was reduced by a smaller extent (approximately 25% less) than perfectionism. Based on our framework, such a ratio provides conclusive evidence for the effectiveness of this intervention. Students entered the intervention as perfectionists and they ended up somewhere between the zones of excellence striving and non-perfectionism. Furthermore, our multivariate re-analysis of the bivariate correlations indicates that excellence strivers experienced better adjustment (lower anxiety, depression, stress, body-related acceptance, and higher self-compassion) compared with perfectionists.
Conclusion: Future interventions should target the reduction of perfectionism and the maintenance of excellencism because excellencism relates to desirable outcomes. Our secondary data analysis was needed to inform researchers and practitioners about an alternative interpretation of Grieve and colleagues' findings. Future interventions to reduce perfectionism should closely monitor excellencism and follow the interpretational guidelines advanced in this article.

Keywords: Perfectionism; Excellencism; Intervention; Mental Health; University students

Introduction

Over the last two decades, a cognitive behavioural therapy for perfectionism (CBT-P) has been successfully used to modify the standards, concerns, and behaviours of perfectionists (e.g. Egan and Shafran, 2018; Egan *et al.*, 2016) with the goal of alleviating their symptoms of depression, anxiety, and eating disorders (e.g. Galloway *et al.*, 2022; Iliakis and Masland, 2021; Lloyd *et al.*, 2015; Robinson and Wade, 2021; Suh *et al.*, 2019). Recent trends indicate that parental pressure (Curran and Hill, 2022), performance-related pressure (Luthar *et al.*, 2020), and perfectionism (Curran and Hill, 2019) are increasing among newer generations of adolescents and young adults.

For that reason, there is a pressing need to devote even more theoretical and empirical attention to the challenging task of reducing perfectionism without harming ambition and motivation. As noted by Wade (2018), "showing that we can decrease unhelpful perfectionism while not touching, or even improving, drives for competency and autonomy, and goal-directed activity, will help justify the use of such interventions in school settings" (p. 278).

The *Model of Excellencism and Perfectionism* (MEP; Gaudreau, 2019; Gaudreau *et al.*, 2022) was recently created to discern excellencism and perfectionism. A person who pursues high standards is not necessarily a perfectionist. Excellencism refers to the aiming and striving towards "high yet attainable standards in an effortful, engaged, and determined yet flexible manner" (Gaudreau, 2019; p. 200). Studies have found that excellencism rather than perfectionism should be promoted among university students because excellence strivers obtain better academic and creative achievement compared with perfection strivers (e.g. Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). Excellencism appears like a preferable pursuit than perfectionism.

Grieve *et al.* (2022) conducted the first-ever randomized controlled trial examining the effects of the CBT-P on *both perfectionism and excellencism*. Two of their findings regarding excellencism are worthy of further consideration. First, the intervention not only reduced perfectionistic standards and concerns, but it also decreased excellencism. It was argued that "excellencism was expected to be helpful and therefore would not be decreased by CBT-P" (Grieve *et al.*, 2022; p. 9). In the current study, our primary goal was to revisit this finding and enhance its interpretation through a precise analysis of the conceptual distinction between excellencism and perfectionism. To do so, we advanced a new MEP-driven framework of five hypothetical scenarios that will facilitate interpretation in future intervention research. Results of Grieve *et al.* (2022) were re-analyzed and re-interpreted using our framework. Second, positive correlations were observed between excellencism and indicators of psychological maladjustment (e.g. anxiety, body-image concerns) measured before the intervention. These findings should be interpreted with caution. The MEP proposes that the effects of excellencism should be interpreted only after controlling for perfectionism (and vice versa). The MEP is a new theory and empirical examples have just recently appeared in the literature (e.g. Gaudreau e*t al.*, 2022; Goulet-Pelletier *et al.*, 2022). In this article, our secondary goal was to re-analyze the correlational data published in Grieve *et al.* (2022) using the analytical and interpretational recommendations anchored in the MEP (Gaudreau, 2019; Gaudreau *et al.*, 2023b).

The Model of Excellencism and Perfectionism (MEP)

The MEP proposes that excellencism and perfectionism fall along a spectrum of increasingly elevated aiming and striving (e.g. Gaudreau, 2019). *Excellence strivers* aim and strive toward excellence. When they approach or attain sufficiently high standards, they are satisfied and do not strive beyond excellence. They pursue excellence but not perfection. In contrast, *perfection strivers* aim and strive toward perfection. When they reach excellence, they push forward and maintain their striving in the hope of attaining or reducing the distance between themselves and their elusive goal of reaching perfection. In that sense, perfectionism can be considered as a special case that goes over and above excellencism. Those who pursue perfection inadvertently pursue excellence in their quest toward perfection. Perfectionism and excellencism operate in a partially conjunctive relation in which perfectionism goes over and above excellencism. Consequently, perfectionism and excellencism are significantly associated with correlations ranging from .34 to .51 (e.g. Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). As a corollary, if one accepts this assumption, then interventions designed to reduce perfectionism could end up reducing both perfectionism and excellencism because of the conceptually expected overlap between the two constructs. This should not be interpreted as inherently bad news when evaluating the effectiveness of an intervention primarily designed to reduce perfectionism. As such, it remains to be seen if an intervention can reduce perfectionism (i.e. perfectionistic standards and the many
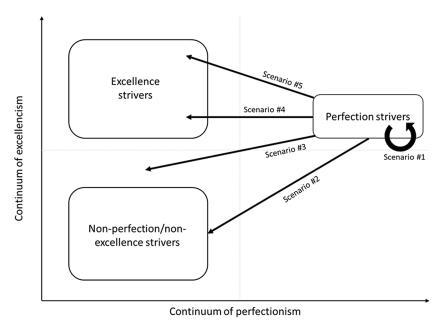
Figure 1. Five Scenarios of Intervention Outcomes using the Juxtaposed Effects Framework (JEF).
Note. Shaded perforated lines represent the mean score of perfectionism and excellencism.

cognitive, social, and behavioral expressions of perfectionism; Gaudreau, 2021; Gaudreau *et al.*, 2023a) to a significantly larger extent than it reduces excellencism.

In Fig. 1, we forward the *Juxtaposed Effects Framework* (JEF) to depict five hypothetical scenarios of intervention outcomes to help interpret the effect of interventions used to help perfectionists – like the CBT-P and other types of interventions (e.g. mindfulness). The framework assumes that students and clients enter the intervention with elevated perfectionism – as per the inclusion criteria used in the CBT-P of Grieve *et al.* (2022). Up to now, researchers concluded that interventions specifically designed to decrease perfectionism were effective when they significantly decreased perfectionism. Our framework assumes that the effects of interventions will be more easily interpretable once the effects on both perfectionism and excellencism are juxtaposed rather than interpreted in isolation. Different *juxtapositions of effects* are possible and the JEF uses theory-driven principles from the MEP to elaborate on what should happen when an intervention reduces neither perfectionism nor excellencism (scenario 1), both perfectionism and excellencism to a similar degree (scenario 2), perfectionism to a larger degree than excellencism (scenario 3), only perfectionism (scenario 4), and only perfectionism while increasing excellencism (scenario 5). Hereafter, our goal was to describe each scenario in a neutral and hypothetical manner without making inferences about their plausibility.

In the *first scenario*, students would not benefit from the intervention. They would display a null to small effect (e.g. Cohen's *d* between 0 and –0.10) on both perfectionism and excellencism. After the intervention, students would clearly remain above the mean of excellencism and perfectionism (which is the operational definition of perfection strivers in the MEP). Students would still be perfection strivers regardless of the intervention.

In the *second scenario*, students would finish with reduced scores on perfectionism. However, the intervention would inadvertently reduce their excellencism. With comparable decrease on excellencism and perfectionism (e.g. $d = -0.60$), students would shift from being perfection strivers to non-excellence/non-perfection strivers. The intervention, which aimed at reducing

perfectionism, would be effective at reducing perfectionism. However, it would inadvertently reduce excellencism and push the students toward the pursuit of low standards. Does it mean that the intervention is ineffective at reducing perfectionism? Quite the contrary. The intervention is effective at targeting perfectionism as a primary risk factor. However, it also reduces personal standards below the threshold of excellencism. Students would now be non-excellence/non-perfection strivers. This would not be optimal because studies showed that non-excellence/non-perfection strivers have lower need for achievement and lower life-satisfaction and they make lower goal progress compared with both excellence and perfection strivers (Gaudreau *et al.*, 2022). Their academic achievement and creativity are also lower compared with excellence strivers (Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). Consistent with Wade (2018), we believe that such an intervention outcome would be viewed unfavourably because "any interventions that seek to lower standards are unlikely to be welcomed in school setting" (p. 267).

In the *third scenario*, the intervention would reduce perfectionism to a larger extent compared with excellencism (e.g. $d = -0.60$ *vs* -0.30). The smaller decrease in excellencism (compared with perfectionism) would be a desirable outcome because it would show that an intervention that primarily targets perfectionism indeed reduces perfectionism. Impact on excellencism would be smaller than the one presented in the second scenario. As a result, students would shift from perfection strivers to a zone between non-excellence/non-perfection strivers and excellence strivers. Specific implications would vary slightly depending on their baseline score of excellencism. When starting with higher-than-average excellencism, the smaller decrease in excellencism would mean that students would still gravitate around the average of excellencism after the intervention; they would be closer to the zone of excellence strivers (scenario 3a). When starting with average score on excellencism, the decrease in excellencism would bring them below average score of excellencism after the intervention; they would be closer to the zone of non-excellence/non-perfection striving (scenario 3b). Based on prior MEP research, scenario 3a would be preferable because excellencism has been positively associated with desirable outcomes (e.g. Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). In both cases, however, students will no longer be perfection strivers, thus indicating that an intervention designed to reduce perfectionism fulfilled its promises.

The *fourth scenario* would be more desirable by virtue of significantly reducing perfectionism ($d = -0.60$) without significantly decreasing excellencism (Cohen's d between 0.10 and -0.10 or a null effect). This intervention would reach its goal of reducing perfectionism without hindering excellencism. Students would move from perfection strivers to become closer from the prototypical cases of excellence strivers as defined in the MEP (i.e. above average on excellencism and lower than average on perfectionism). At the conceptual level, excellencism and perfectionism are correlated. However, perfection strivers not only pursue the high standards involved in excellencism; they also pursue the more gruelling and exacting standards involved in perfectionism (see Fig. 1; Gaudreau, 2019). At the empirical level, MEP studies have showed that perfectionism (but not excellencism) is significantly associated with the cognitive (e.g. doubts about actions, concerns over mistakes) and social (e.g. socially prescribed perfectionism, other-oriented perfectionism) expressions of perfectionism known to be closely associated with psychological distress (Gaudreau *et al.*, 2022). Furthermore, excellence strivers have higher academic achievement, creativity, and self-compassion while showing lower fear of failure and need frustration compared with perfection strivers (Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). At the clinical level, CBT-P does not try to reduce the standards *per se*; it rather aims to reshape the unrealistic, unattainable, and inflexible standards that undergird the rigid, critical, punitive and contingent self-worth judgements involved in perfectionism (e.g. Egan *et al.*, 2016). Given all of the above, decreasing perfectionism while maintaining excellencism should be seen as a highly desirable outcome. Support for the fourth scenario of the JEF would be welcomed because it would reciprocate with the ideals of success and wellness valued and cultivated in school settings (Walton and Yeager, 2020).

A *fifth scenario* can be hypothesized but it remains unclear if it could realistically be achieved. When recruiting participants with high perfectionism and excellencism (i.e. the operational definition of perfection strivers in the MEP), decreasing perfectionism while increasing excellencism would be difficult to achieve. However, when recruiting participants with high perfectionism and average excellencism, this pattern of effects would be theoretically possible. In this case, students would clearly move from perfection strivers to excellence strivers. This pattern and the one depicted in the fourth scenario would, in our opinion, require the development of novel interventions specifically designed to *reduce perfectionism while optimizing excellencism*. Decreasing perfectionism "while not touching or even improving" excellencism "will help justify the use of such interventions in school settings" (Wade, 2018; p. 278). As noted by Iliakis and Masland (2021), the goal of interventions for perfectionistic students should not be to curb their ambition.

This study

The current article should not be interpreted as a criticism of the research and interpretations of Grieve *et al.* (2022). They conducted the first-ever CBT-P intervention in which excellencism was closely monitored. Their pioneered intervention research was inspirational and gave us the opportunity to propose the JEF – a theory-driven framework to facilitate the interpretation of intervention effects like the ones reported in their study. Re-analyzing their published results (rather than running a new randomized trial) was the most efficient way to inform researchers and practitioners about an alternative way of interpreting Grieve and colleagues' findings. Our primary goal was to re-examine their intervention effects and reinterpret them in light of the five scenarios proposed in the JEF (see Fig. 1).

Much can be learned by examining the associations of excellencism and perfectionism with indicators of psychopathologies of individuals participating in interventions for perfectionists. Grieve *et al.* (2022) reported positive correlations between excellencism and indicators of psychological maladjustment (e.g. anxiety, body-image concerns) measured before the intervention. Such correlations, however, cannot be taken *ipso facto* as evidence for the unhealthy nature of excellencism. Past studies on the MEP relied on multivariate statistics (e.g. multiple regression) to make inferences about the outcomes of perfection strivers, excellence strivers, and non-excellence/non-perfection strivers. Therefore, our secondary goal was to re-analyze the correlations published in Grieve *et al.* (2022) using a multiple regression and to re-interpret the effects using the interpretational guidelines forwarded in the MEP (Gaudreau, 2019; Gaudreau *et al.*, 2023b).

Method

This study was written as a commentary in which we re-interpreted the results as they were published in the article of Grieve *et al.* (2022). All information regarding the sample size, characteristics of the participants, the design and procedure of the randomized control trial, the content of the intervention, and the measurement instruments should be directly consulted in the article of Grieve *et al.* (2022).

Grieve and colleagues (2022) published the first-ever study examining the effects of the CBT-P intervention on both excellencism and perfectionism as conceptualized in the MEP. Perfectionistic students (i.e. with elevated concern over mistakes in a baseline questionnaire) were randomized in an internet, client-based, and module-based CBT-P ($n = 41$) or a wait-list control group ($n = 48$). Effects of the intervention were estimated using psychometrically sound and frequently used questionnaires measuring perfectionistic standards and concerns (Frost *et al.*, 1990; Slaney *et al.*, 2001). Self-compassion (Raes *et al.*, 2011), body image acceptance (Sandoz *et al.*, 2013), and depression-anxiety-stress (Lovibond and Lovibond, 1995) were also measured. Participants completed the SCOPE (Gaudreau *et al.*, 2022) – a measure of excellencism and
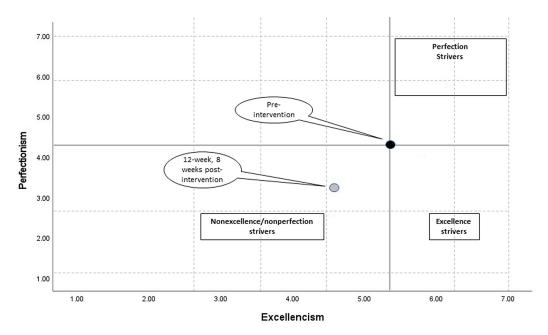
Figure 2. Visual Representation of the Intervention Outcome of Grieve *et al.* (2022).
*Note.*Solid grey lines represent the mean of excellencism and perfectionism. Shaded perforated lines represent decreases/increases of one standard deviation.

perfectionism – at baseline, at mid-point during the intervention (week 2), at the end of the intervention (week 4), and after the intervention (week 12; 8 weeks post-intervention). Overall, the design of this study offered a methodologically rigorous example to re-evaluate the effect of this intervention through the lens of the JEF.

Results

Re-interpretation of the intervention effect from Grieve et al. (2022)

Participants in the intervention group reported a decrease on both excellencism and perfectionism (see Grieve *et al.*, 2022; their table 3). The raw decrease in perfectionism (baseline = 4.28 *vs* post-intervention = 3.24; difference = –1.04) was stronger than the raw decrease in excellencism (baseline = 5.36 *vs* post-intervention = 4.59; difference = –0.77). This finding indicates that the intervention potentially had a stronger effect on perfectionism than on excellencism. The raw decrease in excellencism was approximately 25% smaller than the decrease in perfectionism. As such, the effects of the intervention are consistent with scenario 3 in Fig. 1 and helped to shift perfection strivers away from perfection striving.

   We created a figure to graph the observed scores at baseline and 8 weeks after the intervention (see Fig. 2). Eight weeks after the intervention, students who were initially perfection strivers were now in a zone between excellence strivers and non-excellence/non-perfection strivers. As shown in Fig. 2, students shifted closer to a zone of non-excellence/non-perfection striving than a zone of excellence strivers. Consistent with scenario 3b, the students entered the intervention with average score on excellencism.[1] Consequently, their decrease in excellencism moved them below the

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[1]In Gaudreau *et al.* (2022, study 2), the mean of excellencism ranged from 5.34 to 5.54 across three samples.

average score of excellencism after the intervention and they ended up closer to the zone of non-excellence/non-perfection striving. We can nonetheless conclude that students were no longer perfection strivers, thus indicating that an intervention designed to reduce perfectionism fulfilled its promises.[2]

Between-group differences revealed a similar pattern of effects. At week 12, eight weeks after the intervention, both excellencism and perfectionism were lower in the intervention than the control group. Furthermore, the raw between-group difference in perfectionism (intervention = 3.24 vs control = 3.88; difference = –0.64) was stronger than the raw between-group difference in excellencism (intervention = 4.59 vs control = 5.04; difference = –0.45). Grieve and colleagues displayed the Cohen's d between-group effect size in their Fig. 2. Of particular interest, the effect size was stronger for perfectionism than excellencism (approximately d = –0.50 vs –0.10). Furthermore, the 95% confidence interval of the Cohen's d effect for excellencism (but not perfectionism) straddled zero, which indicates that the between-group difference did not reach statistical significance. Overall, this pattern of effects is also consistent with scenario 3b of the JEF.

Re-interpretation of the correlational effects from Grieve et al. (2022)

Overview of analyses

In the study of Grieve et al. (2022), excellencism correlated with higher levels of anxiety, stress, and body-related concerns. It is important to highlight that the correlations of excellencism and maladjustment were all smaller than the correlations of perfectionism and maladjustment (e.g. anxiety, r = .19 versus r = .37). The MEP introduced excellencism as a reference point to compare the effect of perfectionism. Bivariate correlations are not appropriate to achieve such comparisons because they do not account for the overlap between excellencism and perfectionism.

Using the correlation matrix published in Grieve et al. (2022), we followed the analytical and interpretational guidelines of the MEP (Gaudreau, 2019; Gaudreau et al., 2023b) to conduct a series of multiple regression presented in Table 1 (for a similar approach of re-analyzing published correlation matrix, see Credé and Howardson, 2017). This re-analysis was not meant to criticize the analytical decisions and interpretations made by Grieve and colleagues (2022). Their research, conducted with participants selected for an intervention (i.e. with concerns over mistakes at 1SD above the mean) offered us an opportunity to extend our knowledge about the differences between non-excellence/non-perfection strivers, excellence strivers, and perfection strivers for *students with elevated perfectionistic concerns*. Plus, it offered us an opportunity to showcase the analytical guidelines proposed in Gaudreau (2019; p. 205) and substantiated in Gaudreau et al. (2023b) to ensure that future research produce suitable tests of the MEP hypotheses. The correlation matrix and Mplus syntax codes of our analyses are available at: https://osf.io/p53gn/?view_only=edd5d232f0754c8cb835d5d7c471f4e1

Results of multiple regressions

Results of our multiple regressions in Table 1 indicated that perfectionism (but not excellencism) was significantly associated with higher maladjustment and lower adjustment. Predicted values of the dependent variables cannot be calculated and graphed using standardized beta. We nonetheless graphed two examples to compare the predicted values of (a) non-excellence/non-perfection strivers (–1SD of excellencism and –1SD of perfectionism), (b) excellence strivers (+1SD of excellencism and –1SD of perfectionism), and (c) perfection strivers (+1SD of excellencism and +1SD of perfectionism). The pattern of associations indicates that perfection strivers have significantly higher depression symptoms compared with excellence strivers (see Fig. 3A).

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[2]This interpretation remains speculative considering that a similar trend was observed for participants randomized in a wait-list control group – a point that we will briefly discuss in our recommendations for future research.

Table 1. Results of multiple regression

Predictors	Depression	Anxiety	Stress	Body acceptance	Self-compassion
Excellencism	−.195*	−.087	.004	.076	.145
Perfectionism	.377***	.427***	.347***	−.410***	−.455***
R^2	.084	.141	.123	.133	.142

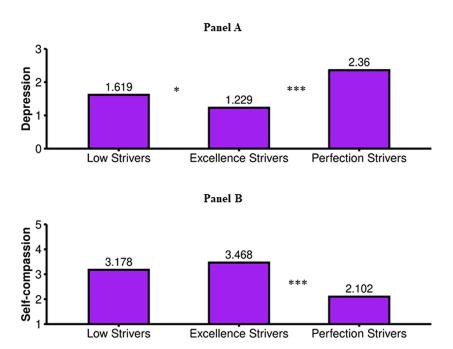Standardized beta. ***$p < .01$; **$p < .05$; *$p < .10$.

Figure 3. Visual Representation of the Correlational Effects of Grieve *et al*. (2022).
Note. Low strivers = Nonexcellence/nonperfection strivers. ***p < .01. **p < .05. *p < 10.

This pattern replicated across anxiety and stress, and provided support for the position that perfectionism is harmful because it relates to increased psychological risks beyond the pursuit of excellence. Excellence strivers reported comparable depression, anxiety, and stress symptoms compared with non-excellence/non-perfection strivers. Overall, excellencism was preferable to perfectionism.

Perfectionism (but not excellencism) was also associated with reduced body acceptance and self-compassion. This pattern of association indicates that perfection strivers have significantly lower body acceptance and self-compassion compared with excellence strivers, while excellence strivers were not associated with worse or better body acceptance and self-compassion compared with non-excellence/non-perfection strivers (see Fig. 3B). This finding also provided support for the position that perfectionism is unhealthy and harmful compared with excellencism.

Discussion

Reinterpretation of the intervention effect from Grieve et al. (2022)

In this study, we proposed the Juxtaposed Effects Framework (JEF; see Fig. 1) to help interpret the effects of interventions designed to reduce perfectionism. Our primary goal was to re-interpret the

effects of the first-ever intervention to have measured both excellencism and perfectionism before and after the intervention.

Grieve *et al.* (2022) reported that their CBT-P intervention ended up *reducing both perfectionism and excellencism*. They interpreted their findings as unexpected because "excellencism was expected to be helpful and therefore would not be decreased by ICBT-P" (p. 9). As exemplified in the JEF, an ideal intervention effect would significantly reduce perfectionism without significantly decreasing excellencism (see scenario 4 in Fig. 1). However, reducing excellencism should not be taken *ipso facto* as a bad intervention outcome. Based on the JEF, we derived a more nuanced interpretation indicating that the intervention was relatively more successful than unsuccessful. More specifically, the pattern of effects observed by Grieve *et al.* (2022) matched interpretation scenario 3b illustrated in the JEF. On the one hand, the CBT–P intervention was effective at reducing its primary target (i.e. perfectionism). On the other hand, excellencism decreased to a smaller extent than perfectionism. When re-interpreted together, in a juxtaposed manner, these effects indicate that students who were initially perfection strivers (before the intervention) ended up in a zone between excellence striving and non-excellence/non-perfection striving after the intervention (see Fig. 2). This is also an indication that the intervention did not reduce the standards of the students to a point where they would now be considered as non-excellence/non-perfection strivers.

Consistent with scenario 3b, students in this sample entered the intervention with average excellencism. Consequently, their decrease in excellencism moved them below the average score of excellencism after the intervention; this is why they ended up closer to the zone of non-excellence/non-perfection striving (see Fig. 2). The outcome of the intervention could potentially be optimized by producing less or no significant decrease in excellencism. Nonetheless, it is important to re-iterate that the intervention helped perfectionistic students in transforming their aiming and striving. Their perfectionistic concerns also decreased during the intervention. Overall, the intervention helped in making the perfection strivers less perfectionistic.

Thirty years of research indicate that higher perfectionistic standards are associated with many perfectionistic concerns closely tied to psychological maladjustment (e.g. Flett *et al.*, 2022; Gaudreau, 2021; Limburg *et al.*, 2017; Smith *et al.*, 2022). Interventions that successfully reduce perfectionism should technically reduce symptoms of psychological maladjustment. At the *group-level*, the hypothetical scenarios of the JEF offer needed insights about the conditions needed for an intervention to improve psychological adjustment. On the one hand, enough reduction in perfectionism may be needed for an intervention to improve psychological adjustment. However, identifying the exact quantity of perfectionism reduction needed for an intervention to start improving adjustment remains a question in need of further exploration. On the other hand, if we accept that excellencism can be associated with desirable outcomes (e.g. Gaudreau *et al.*, 2022), then too much reduction in excellencism could potentially be costly. In the intervention of Grieve *et al.* (2022), the students moved closer to a zone of non-excellence/non-perfection striving (see Fig. 2). Coincidentally, the intervention did not significantly improve psychological adjustment (e.g. depression, anxiety, body-related concerns, and self-compassion). Significant improvement in psychological adjustment after CBT-P was found in a recent meta-analytical review (Galloway *et al.*, 2022) and discussed in a reflection of the first 21 years of the intervention (Shafran *et al.*, 2023). However, excellencism was not measured in 14 of these 15 intervention studies because the MEP is a recent addition to the perfectionism literature. Whether the CBT-P interventions included in the systematic review would have produced no change, small decrease, or small increase in excellencism is unknown. Significant improvement in psychological adjustment could potentially be facilitated when interventions help to move students closer to a zone of excellence striving as per scenarios 3a, 4 and 5. Whether or not it was the case in previous CBT-P studies is unknown, but scenarios presented in the JEF offer a novel roadmap to investigate this hypothesis in future intervention research.

Re-interpretation of the correlational effects from Grieve et al. (2022)

Results of our regression analyses can be seen as an original contribution to the literature on perfectionism. Past studies examining depression (e.g. Smith *et al*., 2021) and anxiety (e.g. Burcas and Cretu, 2020; Smith *et al*., 2018) did not differentiate excellencism and perfectionism. Measures often conflated the two constructs in items measuring a mixture of high and perfectionistic standards (e.g. Blasberg *et al*., 2016). As a result, the positive associations between perfectionistic standards and maladjustment have been small and under-estimated. After accounting for overlap with excellencism, our results indicate that perfectionism is clearly a risk factor for psychological maladjustment. This finding provides support for the position that perfectionism is harmful because it relates to increased psychological risks beyond the pursuit of excellence. In that sense, excellencism is preferable to perfectionism.

This pattern of association with body acceptance and self-compassion is also an original contribution. The label "adaptative perfectionism" remains frequently used to describe the presumed positive association between perfectionistic standards and psychological adjustment (e.g. Ljubin-Golub *et al*., 2018). Such positive effects can be attributed to the fact that some measures of perfectionism predominantly capture high standards rather than perfectionistic standards (e.g. Osenk *et al*., 2020). After accounting for excellencism, evidence no longer suggests that perfectionism is associated with healthy outcomes in this sample. In past research, failure to separate excellencism and perfectionism created a situation in which the effects of perfectionism have been mis-estimated. After accounting for overlap with excellencism, perfectionism now clearly appears as a risk factor for decreased adjustment. This finding provides support for the position that perfectionism is unhealthy and harmful because it relates to decreased psychological adjustment beyond the pursuit of excellence. In that sense, these findings reinforce the credibility of the effort to design, implement, and evaluate interventions to reduce perfectionism.

Findings of this study should be interpreted as supportive evidence for the hypothesis that perfectionism is unhealthy or harmful. However, the effects should be interpreted as those of university students with elevated concerns over mistakes who self-selected to participate in an online intervention. These are also the effects observable before an intervention, regardless of whether participants were randomized in the intervention or control group. Future studies should examine how the associations of excellencism and perfectionism with maladjustment (e.g. depression) and adjustment (e.g. self-compassion) change during an intervention and how they differ across those randomized in the intervention versus the control group. As such, it would be interesting to observe if intervention can break down pernicious cycles of associations between perfectionism and maladapted cognitions (e.g. rumination) while boosting more effective cycles of association between excellencism and adaptive cognition (e.g. positive self-talk, cognitive reappraisals). More information is needed to determine the processes through which interventions can help individuals acquire the potentially more realistic and flexible thought repertoires that differentiate excellence and perfection strivers.

Limitations and future research

Not everyone randomized in an intervention will react the same way to an intervention. Therefore, inter-individual differences in change should be also considered at the *individual-level*. Different degree and pattern of *juxtaposed changes* in perfectionism and excellencism during an intervention could potentially explicate how the intervention translates into improvement (or the lack of thereof) in psychological adjustment for some individuals more than some others. Moving the JEF at the individual-level appears promising to develop theory-driven criteria to help clinical psychologists evaluate the effectiveness of their intervention with each of their perfectionistic clients.

When assessing the effects of perfectionism intervention research, it is pivotal to remember that students are using more and more services available on campus (Lipson *et al*., 2019). As a result,

it is possible that students on a wait-list control group reduce their perfectionism by virtue of having access to information that helped them cope with the doubts and concerns while helping them to keep their expectations "in check". Effects of perfectionism interventions are competing against the potentially beneficial effects of many other interventions naturally occurring in the real life of students. As such, we interpret the effects reported in Grieve *et al.* (2022) as those of a randomized field or pragmatic trials (Thorpe *et al.*, 2009; Torgerson and Torgerson, 2008; Tosh *et al.*, 2011). What is being tested is the incremental effect of the perfectionism intervention over and above already existing services on campus. In that context, small but significant between-group effects are encouraging. The practicality and importance of the effect size should not be minimized.

Conclusion

The MEP is a new theory. Although Gaudreau (2019) formulated testable hypotheses, empirical examples are just starting to appear to orient empirical tests of these novel ideas (e.g. Gaudreau *et al.*, 2022; Goulet-Pelletier *et al.*, 2022). This article should be considered as a clarification rather than a criticism of the analytical decisions and interpretations of Grieve *et al.* (2022). In our re-analysis, we found no support for the position that perfectionism can be healthy when applying a multiple regression to the correlational data of Grieve *et al.* (2022). This, in essence, adds to a growing corpus of knowledge that points towards the need to separate the effects of high standards and perfectionistic standards (Gaudreau *et al.*, 2023b; Osenk *et al.*, 2020) to better understand the psychopathological outcomes associated with perfectionism (e.g. Limburg *et al.*, 2017).

The intervention study of Grieve and colleagues (2022) included many time points, a control group, and several measures taking a wide-ranging look at various characteristics of the perfectionism construct. Their methodologically rigorous research is commendable because it contributes to the development of evidence-based interventions for individuals who suffer from the undesirable outcomes associated with perfectionism. Their work was inspirational and helped us formulate the JEF – a novel framework anchored in the MEP – to evaluate the effectiveness of interventions to reduce perfectionism. Based on the JEF, we concluded that the CBT-P was effective because it reduced perfectionism to a larger extent than it reduced excellencism. As shown in scenario 3b of the JEF, the intervention reduced the standards of the students but did not turn them into non-excellence/non-perfection strivers. Based on the juxtaposed effects of the intervention on perfectionism and excellencism, it can be said that participants who received the CBT-P moved from a zone of perfection striving to a zone between excellence striving and non-excellence/non-perfection striving. We recommend that future interventions to reduce perfectionism closely monitor excellencism and follow the interpretational guidelines advanced in the JEF.

Ethical standard. The study was approved by the Social and Behavioural Research Ethics Committee of Flinders University in Australia [file #7971; see Grieve *et al.* (2022), p. 133]. We were not involved in the original study. In conducting this secondary data analysis, we abided by the code of ethics from the Canadian Psychological Association.

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