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A not so perfect plan: An examination of the differential influence of multidimensional perfectionism on missed and gained events during the COVID-19 pandemic

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ARTICLE INFO

Keywords:

Perfectionism
Missed and gained events
Basic psychological needs
Depressive symptoms

ABSTRACT

During the COVID-19 pandemic, many individuals missed out on important life events, but it was also a chance for some to engage with new interests or values. This research examined how individuals higher in perfectionism experienced missed and gained events during the pandemic, and how their perceptions of these events influenced their mental health. University students ($N = 350$) were surveyed in September 2020, assessing perfectionism, depression, missed/gained events, and need satisfaction related to these events, and then followed up in December. A combined missed and gained event score was created to better understand overall need satisfaction from these changes. Individuals higher in self-critical perfectionism were more likely to experience need dissatisfaction overall and this partially explained why these individuals experienced more depressive symptoms over time during the pandemic. Conversely, those higher in personal standards perfectionism experienced more need satisfaction overall and this was related to reduced depressive symptoms. Results suggest that individuals higher in self-critical perfectionism were less flexible when things did not go according to their plan. This may be one reason these individuals had a more difficult time coping during the COVID-19 pandemic.

1. Introduction

The COVID-19 pandemic was an unprecedented time in modern history which disrupted daily life for many individuals. During the pandemic vacations, summer jobs, and other special events were missed or put on hold. The pandemic was also a time to engage in new hobbies, or with old friends, or a time where many may have gained something unexpected. Our ability to find new need satisfying opportunities during this time, may have been one way to cope through the pandemic and buffer against the increased psychological distress during this time (Ettman et al., 2020). There may have been individuals who were more sensitive to this chaos or life disruption, like individuals who expect or plan for perfection. Leading perfectionism researchers, Flett and Hewitt (2020), warned that the pandemic may be a distressing time for those higher in perfectionism. The uncertainty and lack of control during this time may have been especially difficult for these individuals who typically over value negative events and are less cognitively flexible (Hewitt & Flett, 1993; Levine et al., 2017). During the pandemic, individuals higher in perfectionism may have experienced increased psychological distress by focusing on the bad instead of the good, or by being unable to

adequately replace their lost sense of autonomy, competence, and relatedness (need satisfaction) from missed experiences, with gained experiences. The current research examined whether perceptions of gained and missed events during the pandemic partially explained why these individuals were at greater risk for depressive symptoms during this time.

1.1. Perfectionism and depressive symptoms

Perfectionism was originally conceptualized as the desire to achieve excessively high standards (Burns, 1980). Two higher order facets of perfectionism have been distinguished (Dunkley et al., 2006). Self-critical perfectionism combines the excessive pursuit of high standards with self-criticism and cognitive distortions (Frost et al., 1990). The cognitive distortions that accompany this trait involve a perceived discrepancy in achievement, uncertainty about ability, and concerns about mistakes (Dunkley et al., 2000). Conversely, personal standards perfectionism is defined solely by the pursuit of high or unrealistic goals (Stoeber & Otto, 2006). Self-critical perfectionism has been identified as a vulnerability factor for a wide range of psychopathology, including

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depressive symptoms, anxiety, and eating pathology (Egan et al., 2011; Levine et al., 2021). In contrast, personal standards perfectionism has been found to be positively, negatively and unrelated to depressive symptoms (Limburg et al., 2017; Smith et al., 2016, 2021).

1.2. Perceptions of missed and gained events

The pandemic was an unprecedented time in modern history, where the world was put on hold. With the months of disappointment and loss, it is not surprising that the pandemic was also a period of increased depression, anxiety, and stress (Ettman et al., 2020). However, some people coped successfully during the pandemic and even found growth or enjoyment during this time (Fullana et al., 2020). Hobbies, going outside, getting to spend time with a small group of close others were all found to buffer against depressive symptoms during this time (Fullana et al., 2020). Perhaps, one reason these gained events were beneficial to well-being was because they were need satisfying during this need dissatisfying time.

Basic psychological needs theory, a mini-theory within self-determination theory posits that need satisfaction is essential for well-being (Ryan & Deci, 2017). A person's three basic psychological needs are competence (feeling confident in one's abilities), relatedness (feeling close to others), and autonomy (feeling volitional) (Ryan & Deci, 2017). When an individual perceives an event to be more need satisfying, they are more likely to experience higher well-being and reduced depression (Ryan & Deci, 2017). This is even true for our recall of events, an autobiographical memory that is perceived to be more need satisfying can result in improved well-being over time (Philippe et al., 2011, 2012).

The pandemic was likely a need thwarting experience for many, a time when individuals were not fully able to satisfy their basic needs due to public health restrictions. Low need satisfaction is not the same construct as need frustration (Warburton et al., 2020). For example, a plant will not fair well if it does not have sunlight (low need satisfaction) but will wither and die quickly if you use salt water on it (need frustration). During the pandemic, the loss of special events likely deprived many of fully satisfying their needs, a time of low need satisfaction, or need dissatisfaction. Additionally, the ability to find need satisfying experiences to make up for the lost need satisfaction from missed experiences may have been an important coping mechanism to reduce psychological distress. An individual who was biased towards focusing on their missed events may have a harder time coping during the pandemic and may be more likely to experience psychological distress.

1.3. Perfectionism and perceptions of missed and gained events

Self-critical perfectionism is characterized by several cognitive biases, such as dichotomous thinking, fixation on negative events, concerns over mistakes, ruminative and rigid thought patterns (Egan et al., 2007; Levine & Milyavskaya, 2018). For these reasons, perfectionism was identified as a vulnerability factor for burn out and mental illness during the pandemic (Flett & Hewitt, 2020). During a pandemic, being cognitively inflexible when things did not go according to plan, may have been a detriment.

Individuals higher in self-critical perfectionism are less likely to report need satisfaction in daily life (Boone et al., 2014). This may suggest that the daily hassles they experience may make their lives less satisfying (Dunkley et al., 2000), or that perhaps these individuals are biased towards remembering need dissatisfying experiences over need satisfying ones. By contrast, individuals higher in personal standards perfectionism are more likely to report need satisfaction in daily life (Jowett et al., 2016). The differential influence of perfectionism on perceptions of need satisfaction from missed and gained events during the pandemic may provide an additional understanding of how these individuals coped.

1.4. The present study

To examine the influence of perfectionism on mental health during the pandemic, university students were surveyed on their missed and gained events from the summer and their mental health in September and completed a follow-up in December. Our first hypothesis was that self-critical perfectionism would be associated with increased depressive symptoms during the pandemic. Second, we predicted that self-critical perfectionism would be associated with increased need dissatisfaction overall from missed events and gained events. Finally, we predicted that recalled need dissatisfaction from missed and gained events would partially explain why individuals higher in self-critical perfectionism were more likely to experience depressive symptoms during the pandemic. We controlled for personal standards perfectionism in our analyses to partial out the shared variance between these traits (Stoeber & Gaudreau, 2017). There are no a-priori hypotheses for personal standards perfectionism.

2. Method

2.1. Participants and procedure

The 350 participants for this online study were recruited from a large Canadian public university. Participants were undergraduate university students ($M_{age} = 19.75$, $SD = 1.41$, 87.9% female). Participants were recruited in September through the university subject pool and compensated with course credit. Participants were then asked whether they would like to be in a follow-up survey for a chance to win a \$100 prize. The initial survey assessed perfectionism, depressive symptoms, missed and gained events, and need frustration/satisfaction related to missed and gained events. In the follow-up survey in December, depressive symptoms were reassessed. This study was approved by the university ethics board. All study materials, data, and syntax are available on OSF: https://osf.io/675fv/?view_only=f5065e26d8ea41e68c16bcb45da36913.

2.2. Measures

2.2.1. Missed events

Participants were asked if they had missed any events because of the pandemic. Participants were shown the following prompt "Life is full of special events, like weddings, trips, family get togethers, holidays, etc. With the current events of the pandemic, many events you may have been looking forward may have been cancelled or postponed. Is there a special event or trip you were looking forward to that has been cancelled due to COVID-19 outbreak? What event or events did you have to miss because of the pandemic?" Participants were given a few lines to share the event they had in mind.

2.2.2. Gained events

Participants were asked if they had gained anything because of the pandemic. Participants were shown the following prompt, "Sometimes during difficult times, unexpected positive events can occur. You may have heard from an old friend or had time to do something you enjoy or to accomplish something new. Life can sometimes be full of wonderful things even in the most difficult of times. Has there been a positive event that has happened since the start of COVID-19 outbreak? What positive event(s) did you experience because of the pandemic? Participants were given a few lines to share the event they had in mind.

2.2.3. Perfectionism

To assess self-critical perfectionism, we used 6 items from the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). The items were chosen because they loaded highest on the self-criticism factor of the DEQ. Sample items include "I tend to be very self-critical" and "There is a significant gap between who I am today and who I

would like to be.” These items have commonly been used to assess this facet of perfectionism (Levine et al., 2020). To assess personal standards perfectionism, all 15 items of the self-oriented perfectionism dimension of the Multidimensional Perfectionism Scale (MPS) were used (Hewitt & Flett, 1991; Hewitt & Flett, 2004). The scale includes items, such as, “One of my goals is to be perfect in everything I do” and “I strive to be the best at everything I do”. The items for self-critical and personal standards perfectionism were interspersed and rated on a 7-point scale, ranging from 1 “strongly disagree” to 7 “strongly agree”. The average of each subscale was taken to compute a mean personal standards and self-critical perfectionism score. ($\alpha_{sc} = 0.83$, $\alpha_{ps} = 0.88$).

2.2.4. Need satisfaction balance

The Balanced Measure of Psychological Needs scale (BMPN) was adapted to assess psychological need dissatisfaction and satisfaction related to missed and gained events (Sheldon & Hilpert, 2012). Three statements were adapted to measure need satisfaction for each basic psychological need (relatedness, competence, and autonomy) for missed and gained events. The prompt to measure relatedness dissatisfaction was “by missing these event(s) I am missing out on close connections with others”; the prompt to measure competence dissatisfaction was “not being able to have these event(s) makes me feel insecure about my abilities”; and to measure autonomy dissatisfaction, “missing out on these event(s) reduces my choices and freedom.” A prompt to measure relatedness satisfaction was “these positive events have made me feel closer to others”; a prompt to measure competence satisfaction was “these positive events have made me feel more competent in my abilities”; and to measure autonomy satisfaction, “these positive events have made me feel like I have a lot of freedom and choice.” Participants rated their agreement with a series of statements on a 7-point Likert scale ranging from 1 “not at all true” to 7 “very true.” All these items were averaged to compute a measure of psychological need dissatisfaction related to missed events and satisfaction related to gained events and then need dissatisfaction was subtracted from need satisfaction to create an index score of perceived need satisfaction. If a student reported one event and not the other, they received a score of zero for the not-reported event. ($\alpha = 0.66$).

2.2.5. Depressive symptoms

The Centre for Epidemiologic Studies Depression Scale Revised (CESD-R 10) was used to assess symptoms of depression (Andresen et al., 1994). The CESD-R 10 is a validated and reliable self-report measure of depression symptoms that focuses on the affectivity component of depressed mood (Andresen et al., 1994). The scale includes items such as “I could not get going” and “I was bothered by things that usually don't bother me.” It is measured on a four-point Likert scale ranging from 1 “rarely or none of the time (<1 day)” to 4 “most or all the time (5–7 days).” A depressive symptoms score was computed by averaging the ten items. ($\alpha_{T1} = 0.83$, $\alpha_{T2} = 0.84$).

3. Results

3.1. Preliminary analysis: Descriptive information on missed and gained events

289 (84%) of the students reported missing an event due to the COVID-19 pandemic, and 279 (81%) of students reported gaining an event over the summer due to the COVID-19 pandemic. On average, students reported 1.77 missed events. We coded student responses for missed and gained events based on the most frequently occurring, and due to overlap, we coded whether a response mentioned or did not mention a theme. The missed events that students reported were travel (74%), time with family and friends (46%), special events (17%) or work/growth opportunity (26%). On average, students reported 1.59 gained events. Gained events that students reported were typically extra time with family and friends (64%), engagement in self-care (43%), or

academic/work opportunity (19%). Table 1 provides a few example responses that students wrote about. Please note that these examples represent the high level of overlap across themes and illustrate how need satisfying or dissatisfying these experiences might have been.

3.2. Preliminary analysis: Descriptive statistics

In Table 2, means, standard deviations and correlations between all variables of interest are presented. Both facets of perfectionism are moderately correlated.

3.3. Main analyses: Regression analyses

To examine the relation between perfectionism and depressive symptoms, a linear regression was run with both types of perfectionism predicting depressive symptoms in December while controlling for depressive symptoms in September (Table 3). Perfectionism was associated with depressive symptoms over time and explained 34.6% of the variance in depressive symptoms over the term ($R^2 = 0.346$, $F(3, 159) = 28.07$, $p < .001$). Self-critical perfectionism was associated with increased depressive symptoms over the term. Personal standards perfectionism was not associated with depressive symptoms. Perfectionism was associated with perceived need satisfaction from gained and missed events and explained 9% of the variance in this variable ($R^2 = 0.090$, $F(2, 328) = 16.14$, $p < .001$). Self-critical perfectionism was associated with overall perceptions of more need dissatisfaction than satisfaction from missed and gained events. Personal standards perfectionism was associated with more need satisfaction than dissatisfaction from missed and gained events.¹

3.4. Main analysis: Mediation analyses

Next, to determine why those higher in self-critical perfectionism were more vulnerable to depressive symptoms during the pandemic, we examined whether a cognitive bias towards overall perceived need dissatisfaction from missed and gained events mediated this relation. Then, we examined whether perceptions of need satisfaction overall buffered against depressive symptoms for those higher in personal

Table 1
Example student responses of missed and gained events.

Missed event themes	Examples
Travel	I missed going back to my origin country and traveling with my family and friends. I missed a summer trip in Europe.
Time with family/ friends	I did not get to visit my grandparents in Bulgaria. I cannot even go back to my hometown due to the pandemic.
Special events	I missed my high school graduation, my high school prom, my last ski race, my figure skating end-of-year show & banquet
Work/growth opportunity	I missed the chance to do hospital shadowing, and volunteering. My research lab is closed as well.
Gained events themes	Examples
Time with family/ friends	Spending more time with my family and realizing how important that time is as well as how important it is to take personal days for myself
Self-care	Rekindled an old friendship, became more content in myself and enjoying the small things.
Academic/work opportunity	Work, meeting colleagues who cared about what they were doing, talking to vulnerable populations (and cheering some of them up, even if temporarily!)

¹ The results were also done for missed and gained events separately. The effects were weaker when examining missed and gained events separately. These results are included on OSF.

Table 2
Means, standard deviations of variables of interest.

Variable	Mean	SD	2.	3.	4.	5.
1. Depression T1	2.18	.58	.56**	.26**	.50**	-.23**
2. Depression T2	2.44	.57	-	.18*	.43**	-.30**
3. Personal standards perfectionism	4.99	.87	-	-	.43**	-.02
4. Self-critical perfectionism	4.59	1.14	-	-	-	-.28**
5. Perceived need satisfaction balance	1.46	3.08	-	-	-	-

** $p < .001$.
* $p < .05$.

Table 3
Standardized regression coefficients examining the influence of perfectionism on depression and need satisfaction.

	Outcome: Depression T2			Outcome: Perceived need satisfaction balance		
	B[95%CI]	t	p	B[95%CI]	t	p
DepT1	0.30 [0.20, 0.39]	6.27	<.001	-	-	-
SCP	0.10 [0.03, 0.17]	2.80	.006	-0.85 [-1.14, -0.55]	-5.67	<.001
PSP	0.01 [-0.08, 0.10]	0.18	.85	0.45 [0.05, 0.85]	2.19	.029

standards perfectionism. Both mediation models were run using SPSS Hayes Process Macro (2012). For all mediation analyses, 95% confidence intervals (CI) of the indirect effect using bootstrap resampling ($k = 10,000$) procedures were estimated. Standardized coefficients (betas) are reported for the following models. Additionally, baseline depressive symptoms and the other facet of perfectionism were controlled for. Fig. 1 shows that each mediation model was supported. This suggests that

those higher in self-critical perfectionism were more likely to experience depressive symptoms over the pandemic because they perceived more need dissatisfaction from missed events, then need satisfaction from gained events. Additionally, individuals higher in personal standards perfectionism were less likely to experience depressive symptoms over the pandemic because they were able to find need satisfaction from gained events and less need dissatisfaction from missed events.

4. Discussion

Self-critical perfectionism was related to increased depressive symptoms during the pandemic partly because these individuals were more likely to fixate on missed events over gained events. The pandemic was an unprecedented time when many individuals lost out on opportunities, but it was also a time when some found new passions. To our knowledge, the current research is the first to consider the impact of perceptions of these missed and gained events during the pandemic and how this influenced mental health during this time. The current research also examined a vulnerability factor, self-critical perfectionism, and whether this trait was related to biases in recollection during this time.

The balance of one's perceptions of missed and gained events to be more need dissatisfying was identified as one mechanism that partially explained the association between self-critical perfectionism and depressive symptoms over time during the pandemic. This is in line with research showing that memories recalled as need satisfying influence well-being over time (Philippe et al., 2011). The current research replicates these findings during the pandemic, an unprecedented time in modern history. Feeling less socially connected, competent, and autonomous in response to missing out on their events and being less able to engage in new opportunities to buffer against this resulted in increased depressive symptoms that persisted over the pandemic. This finding is consistent with our expectation that missed events, including occasions, holidays, and vacations might have been especially disruptive for these individuals who engage in cognitive biases, overvaluation of events, and maladaptive coping (Dunkley et al., 2000). Additionally, these findings

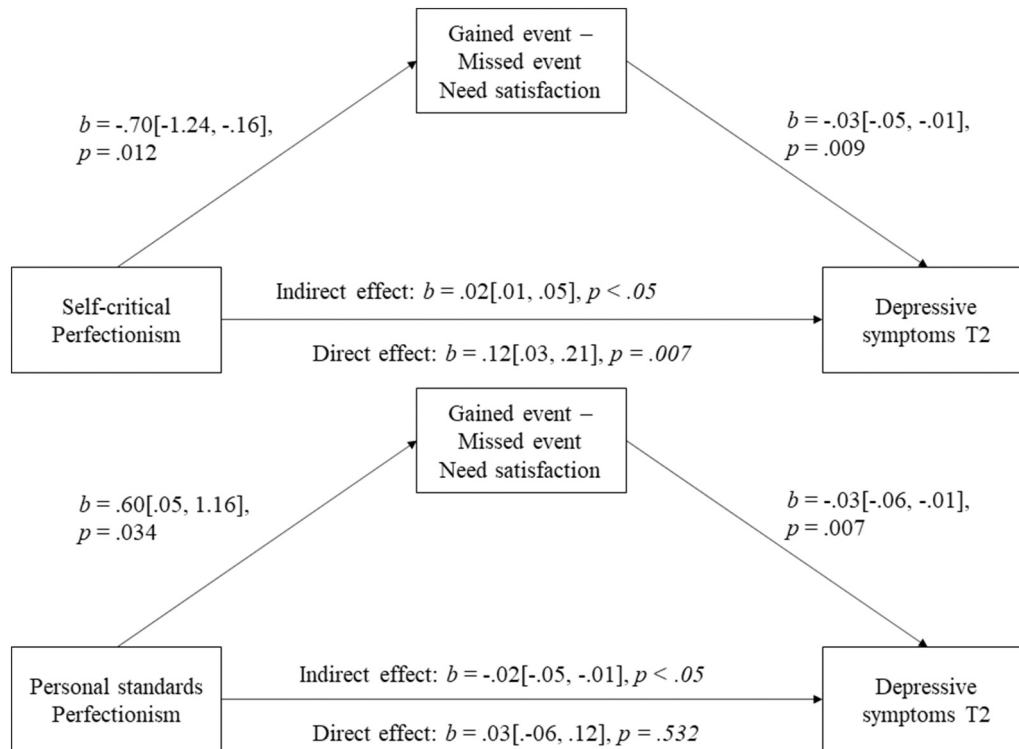


Fig. 1. Direct and indirect effects of self-critical and personal standards perfectionism on depressive symptoms at T2 via perceptions of need satisfaction from gained and missed events over the COVID-19 pandemic.

support theory suggesting these individuals are more sensitive to daily hassles which contribute to their distress. Further, it replicates previous research demonstrating that individuals higher in self-critical perfectionism tend to experience less need satisfaction in daily life (Boone et al., 2014). The current research provides evidence that being biased towards the negative over the positive was one factor that contributed to depressive symptoms during the COVID-19 pandemic for individuals higher in self-critical perfectionism.

An unexpected finding was that personal standards perfectionism was associated with more overall need satisfaction and reduced depressive symptoms during the pandemic when controlling for self-critical perfectionism. Individuals higher in personal standards perfectionism felt more socially connected, competent, and autonomous, suggesting that they were able to select, create, or appreciate need satisfying events to cope during the pandemic, like new hobbies or opportunities to build connections. This finding is in line with past research that suggests that these individuals tend to experience more need satisfaction (Jowett et al., 2016). However, the relation between personal standards perfectionism and eating disorders suggests that it is dangerous to consider this trait adaptive (Egan et al., 2011).

4.1. Limitations and future directions

There are a few limitations of the present study. First, we used a university sample, so further research is needed to determine whether these findings generalize in different populations. However, it is a strength that the participants were university students who have rich and diverse summer experiences, including a variety of missed and gained events. Additionally, university is a critical time for self-development and a period where one's summer is usually full of exciting and memorable experiences. Additionally, perfectionism is prevalent across university campuses and is a vulnerability factor for mental health problems at this developmental stage (Levine et al., 2021). Second, another limitation of this research is that we cannot claim causality since the questionnaire asked people to recall their missed and gained events. We considered how their perceptions and depressive symptoms proceeded these events, but the inverse might be true that those who experienced depression may have been less likely to engage in need satisfying opportunities over the summer. Additionally, our need satisfaction measure had low internal consistency and future research is needed to understand this measure in the context of missed and gained events. Finally, we examined perfectionism while controlling for the other facet of this trait so our results can only be interpreted in this context. This is common in the perfectionism literature (Stoerber & Gaudreau, 2017).

This research further illuminates the differences in cognitive biases between those higher in self-critical and personal standards perfectionism. Future research is needed to further understand why those higher in self-criticism fixate on negative over positive events, and how this could be intervened upon to reduce distress in these individuals. Additionally, little research has examined autobiographical memories in relation to perfectionism and how this influences cognition and behaviour. The current research suggests that intervening on perceptions of past events might be an additional area to focus on in cognitive behavioural therapy (CBT). Individuals higher in perfectionism are generally more difficult to treat in therapy due to this cognitive inflexibility (Blatt & Zuroff, 2002). Perhaps, an intervention trying to identify need satisfying memories may be one way to help restructure these individual's life narratives to help buffer against current and future psychological distress.

4.2. Conclusion

Individuals higher in self-critical perfectionism were more likely to experience depressive symptoms over time during the pandemic because these individuals experienced more need dissatisfaction from missed

events, than need satisfaction from gained experiences. Conversely, those higher in personal standards perfectionism were less likely to experience depressive symptoms during the pandemic because these individuals reported more need satisfaction from gained experiences, then need dissatisfaction from missed experiences. This research furthers our understanding on how individuals higher in perfectionism think and perceive daily events, and the impact that cognitive rigidity and negative rumination can have during a stressful time, like the COVID-19 pandemic.

Credit authorship contribution statement

The original idea was SLL's after the multiple postponements of her wedding due to COVID-19. Data collection was done by SLL with input by GA & RK. The analyses were completed by SLL. The data was coded by GA. The first draft was written by SLL. RK and GA both reviewed and edited the manuscript.

Funding

This study was supported by Fonds de Recherche du Québec - Santé (2017-SE-196443) awarded to R. Koestner. This study was supported by the Social Sciences and Humanities Research Council of Canada Joseph Armand Bombardier Canadian Graduate Scholar to S.L. Levine.

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