

**Socially Prescribed Perfectionism Predicts Next-day Binge Eating Behaviors over
20-days**

Kathleen E. Merwin¹, Sean P. Mackinnon,¹ Rosin M. O'Connor², and Gordon L. Flett³

¹ Department of Psychology and Neuroscience, Dalhousie University, Halifax, NS,
Canada

² Department of Psychology, Concordia University, Montreal, QC, Canada

³ Department of Psychology, York University, Toronto, ON, Canada

Author Note

Kathleen E. Merwin <https://orcid.org/0000-0002-9349-8009>

Rosin M. O'Connor <http://orcid.org/0000-0003-2455-983X>

Sean P. Mackinnon <https://orcid.org/0000-0003-0921-9589>

Gordon L. Flett <https://orcid.org/0000-0002-4502-6285>

We have no conflicts of interests to disclose.

Data/Materials located at <https://osf.io/5g6xa/>

This study was reviewed by Dalhousie University's Social Sciences and Humanities Research Ethics Board and Concordia University's Human Research Ethics Committee.

This study was funded by a Social Sciences and Humanities Research Council Insight

Development Grant. Correspondence concerning this article should be addressed to Sean P.

Mackinnon, Dalhousie University, Department of Psychology and Neuroscience, 1355 Oxford Street, PO BOX 15000Halifax, NS, B3H 4R2. Email: mackinnon.sean@dal.ca.

©American Psychological Association, 2022. This paper is not the copy of record and may not exactly replicate the authoritative document published in the APA journal. The final article is available, upon publication, at: <https://doi.org/10.1037/cou0000600>

Abstract

Existing research on perfectionism and binge eating suggests that socially prescribed, self-oriented, and other-oriented perfectionism (SPP, SOP, and OOP) are differentially related to binge eating. However, previous studies have largely utilized cross-sectional methodology. The present study used a 20-day daily diary methodology to examine associations between daily levels of perfectionistic dimensions and next-day binge eating behaviours with a non-clinical sample of emerging adults ($N = 263$). Zero-inflated negative binomial regression models indicated that daily SPP (but not SOP or OOP) predicted a greater intensity of next-day binge eating behaviours in the count portion of the model; however, daily levels of perfectionistic dimensions did not predict the presence/absence of next-day binge eating behaviours in the zero-inflated portion of the model. Additionally, analyses examining the reverse causal direction (i.e., binge eating behaviors predicting higher next-day perfectionism) failed to provide evidence that the occurrence or intensity of binge eating behaviors predicts next-day levels of SPP, SOP, or OOP. Overall, at a daily level, SPP appears to be a vulnerability factor for binge eating behaviors. It may be helpful for clinicians to target state-levels of SPP to reduce harmful binge eating behaviours.

Keywords: binge eating, perfectionism, socially prescribed perfectionism

Public Significance Statement: It has been suggested that people may be more likely to binge-eat when they believe that others expect and demand perfection from them. This idea was supported by the results of this study, which showed that when a non-clinical sample of emerging adults (i.e., 18-25-year-olds) reported strongly believing that others expect and demand perfection from them (i.e., sociallyprescribed perfectionism), they were more likely to have more intense binge eating behaviours on days when they engaged in binge eating behaviours.

Socially Prescribed Perfectionism Predicts Next-day Binge Eating over 20-days

Binge eating behaviors (i.e., rapidly and uncontrollably eating a large amount of food in a short period of time¹; Mackinnon et al., 2011; Sherry & Hall, 2009) are a transdiagnostic feature of several feeding and eating disorders (e.g., it is a diagnostic requirement for Bulimia Nervosa and can be present in Anorexia Nervosa and Other Specified Feeding or Eating Disorders; American Psychiatric Association, 2013) and poses a serious health risk. Despite evidence that binge eating is linked with physical, social, and emotional difficulties (Javaras et al., 2008), Binge Eating Disorder (BED) was not officially recognized as a psychological disorder until 2013 (American Psychiatric Association, 2013). Given that BED and subclinical binge eating behaviors are linked to negative health outcomes (Kärkkäinen et al., 2018; Sehm & Warschburger, 2018), it is critical to examine factors that may contribute to binge eating, such as perfectionism. The purpose of the present study was to examine associations between daily levels of perfectionism and next-day binge eating behaviors with a non-clinical sample of emerging adults (i.e., between 18 to 25 years old).

Perfectionism

Perfectionism is regarded as a multidimensional personality trait. Perfectionism has historically been viewed as a trait that is stable over time, but researchers have demonstrated that it may be both a stable dispositional trait and a personality state (e.g., Franche & Gaudreau, 2016). For example, Mackinnon et al. (2017) found week-to-week fluctuations in perfectionism and Boone, Soenens, Mouratidis, et al. (2012) found day-to-day fluctuations. Similarly,

¹ Many studies use measures that confound negative affect and binge eating (Sherry & Hall, 2009), the present study chose an operationalization of binge eating that focused on specific behaviours representing binge eating (i.e., rapidly and uncontrollably eating a large amount of food in a short period of time) and not compensatory behaviours, emotional eating, and post-binge emotionality.

Mackinnon et al. (2014) found that within-person fluctuations in perfectionistic cognitions and perfectionistic self-presentation in a 21-day longitudinal study; the authors argued that perfectionism dimensions are best conceptualized as trait-states when analyzed using generalizability theory. Further, there is evidence that this state-like variability in perfectionism predicts important outcomes, such as social anxiety (Mackinnon et al., 2014). Overall, while perfectionism is largely stable over time, there are also meaningful fluctuations across measurement occasions and these fluctuations are linked to important aspects of well-being.

For the purposes of the current study, we focused on three dimensions of perfectionism (originally proposed by Hewitt & Flett, 1991) that are facets of each of the three higher-order perfectionism factors. *Self-oriented perfectionism* (SOP; a facet of rigid perfectionism) is a tendency to set rigid, unrealistically high standards for oneself, *other-oriented perfectionism* (OOP; a facet of narcissistic perfectionism) is a tendency to set rigid, unrealistically standards for others, and *socially prescribed perfectionism* (SPP; a facet of self-critical perfectionism) is the belief that others expect and demand perfection of oneself (Hewitt & Flett, 1991). High levels of SOP and SPP have been linked with negative outcomes such as depression, anxiety, and eating disorders (Limburg et al., 2017), though the associations tend to be stronger for SPP. In contrast, literature has either not examined OOP or found that it is not significantly associated with symptomatology (Cockell et al., 2002; Pratt et al., 2001).

Perfectionism and Binge Eating

Hewitt and Flett's (1991) model of perfectionism focuses on the interpersonal aspects of perfectionism. Sherry and Hall (2009), theorize in their empirically supported Perfectionism Model of Binge Eating (PMOBE) that SPP (but not SOP or OOP) leads to binge eating indirectly through four interpersonal mechanisms including higher interpersonal discrepancies, low

interpersonal esteem, depressive affect, and dietary restraint). The PMOBE suggests that individuals high in SPP actively create situations conducive to binge eating. The evidence linking SPP with binge eating is in keeping with conceptual ties between socially prescribed perfectionism and impulsivity and empirical links that this perfectionism dimension has with deficits in self-control (see Flett, Hewitt, Nepon, Sherry, & Smith, 2021). Further, the PMOBE is consistent with the perfectionism social disconnection model (Hewitt et al., 2006), which posits that perfectionistic individuals tend to experience both objective social disconnection (i.e., severed or impaired interpersonal relationships such as conflict with those around them) and subjective social disconnection (i.e., the psychological experience of isolation, such as low levels of social support and loneliness), which results in psychopathology such as eating disorders.

In line with the PMOBE, research supports strong positive associations between SPP and binge eating (Bardone-Cone et al., 2007; Bardone-Cone et al., 2012). For example, in a cross-sectional study, Pratt et al. (2001) found that SPP—but not SOP—was associated with BED symptoms. In contrast, other studies have supported a link between SOP and binge eating (e.g., Bardone-Cone et al., 2007). For instance, Magson et al. (2019) found that both SPP and SOP were associated with higher levels of eating disorder symptoms in preteens. Similarly, in an experimental study, Boone, Soenens, Vansteenkiste, et al. (2012) found that state perfectionism could be induced in people (regardless of their levels of trait perfectionism) and that participants in the two perfectionistic conditions (i.e., high SOP, high SOP and SPP) reported significantly higher levels of binge eating and dietary restraint in the 24 hours following the manipulation, compared to those in the control condition. Overall, there is extensive linking elevated levels of SPP and SOP with binge eating; however, most investigations are cross-sectional studies. OOP is

typically included as a test of discriminant validity; indeed, we do not expect statistically supported associations between OOP and binge eating.

At present, only a few studies in this area have utilized longitudinal methodology. In a 7-day daily diary study with 566 women, Sherry and Hall (2009) found that high levels of SPP were indirectly associated with binge-eating behaviors, above and beyond levels of SOP and neuroticism. Mackinnon et al. (2011) found subsequently that concern over mistakes (which is strongly correlated with SPP; Smith et al., 2016) indirectly predicted binge eating behaviours in a 3-wave, 3-week longitudinal study of 200 undergraduate women. While initial evidence for SPP predicting binge eating behaviours is strong (see also Smith et al., 2017), there is also some evidence that both SPP and SOP predict binge eating behaviours at the weekly level (Fitzsimmons-Craft et al., 2012). Key tests remain to be conducted despite consistent empirical support that high SPP is a vulnerability for binge eating behaviours.

Rationale

Existing studies on perfectionism and binge eating behaviours have largely utilized cross-sectional methodology and, of the existing longitudinal studies, most used a week-to-week examination. Consequently, little is currently known about perfectionism and binge eating behaviours on a day-to-day basis. Daily diary studies provide greater ecological validity and minimize recall bias because participants report on events closer to their actual occurrence (Bolger et al., 2003). To the best of our knowledge, only two studies have used daily diary methodology to examine perfectionism and binge eating behaviours (Mushqaush & Sherry, 2012; Sherry & Hall, 2009). Moreover, Sherry and Hall (2009) aggregated daily reports to create mean perfectionism scores for participants, which did not allow them to test the possibility that binge eating predicts changes in SPP day-to-day. Our study utilized a 20-day daily diary

methodology with daily measurement of perfectionism and generalized linear models that more accurately model the positively skewed nature of binge eating distributions. Additionally, although there is consistent empirical support that perfectionism is a vulnerability for binge eating behaviours, it is also possible that binge eating behaviors lead to short- or long-term changes in aspects of personality, such as perfectionism (Lilenfeld et al., 2006). Our study addresses this by also examining the reverse-causal direction (i.e., do binge eating behaviors predict next-day perfectionism). The present study provides a more rigorous examination of one aspect of the PMOBE (specifically, the total effect of perfectionism on binge eating behaviors) by controlling for previous-day binge eating behaviours.

The Current Study

In the present study, we examined the associations between daily levels of perfectionistic dimensions (i.e., SPP, SOP, and OOP) and next-day binge eating behaviours with a sample of emerging adult women and men. More specifically, we evaluated two research questions:

RQ1: Do SPP, SOP, and/or OOP predict next-day binge eating behaviors, while controlling for previous day's binge eating behaviors?

RQ2: Is there support for the reverse causal direction, wherein binge eating behaviors confer risk for higher next-day perfectionism scores, while controlling for previous day's perfectionism?

Method

Open Data and Materials

The present study was part of a larger research project with open data (Mackinnon, Ray, et al., 2021); three previous research papers have been published utilizing this dataset². This

²One study examined daily associations between perfectionism, drinking motives, and alcohol-related problems (Mackinnon et al., 2019) and the other examined whether daily perfectionistic self-presentation predicted social anxiety (Kehayes and Mackinnon, 2019). The third paper was a

study represents secondary analysis of an existing dataset and the hypotheses were not pre-registered. All raw data, syntax files, and study materials (including questionnaires used in the present study, as well as others not analyzed in this paper) are open-access and can be found at <https://osf.io/5g6xa/>

Participants

We recruited 263 participants from two Canadian sites (Halifax, Nova Scotia and Montreal, Quebec). Most participants identified their sex as female (79.8%) and Caucasian/White (78.3%). Other self-reported ethnicities were African Canadian/Black (2.3%), Asian (7.7%), First Nations (0.8%), Hispanic (2.7%), Middle Eastern (1.1%), and Other (6.5%). The average age was 21.37 ($SD = 1.89$) years old and participants resided in either Nova Scotia (60.5%) or Québec (39.5%). Data were collected between October, 2016 and February, 2017. The top 4 ways participants heard about our study was through flyers (45.2%), online classified ads (19.4%), word of mouth (17.1%), or the psychology subject pool (16.3%). Given this advertisement strategy, the response rate is unknown.

Materials

Demographics

Sex was measured as a closed ended question with three options: male, female, other (specify). Ethnicity was measured as an open-ended response coded into categories post-hoc. Age was measured as an open-ended number.

Perfectionism

non-empirical statistical tutorial on longitudinal measurement invariance (Mackinnon, Curtis et al., accepted).

Perfectionism was assessed using the 15-item short-form of the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) first used by Hewitt et al. (2008). This version has 5-item subscales that assess self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Each item is rated on a 7-point response scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Subscale total scores can range from 5 to 35. Higher scores indicate higher perfectionism. The short-form MPS has adequate internal consistency and excellent criterion validity when compared to the original measure and is the recommended short form version (Stoeber, 2018).

Binge Eating

To assess daily binge eating behaviours, we administered a measure developed by Sherry and Hall (2009). This measure assesses specific, concrete binge eating behaviors and excludes emotional eating (e.g., eating when anxious but without a sense of loss of control), compensatory behaviours (e.g., purging), and post-binge emotionality (e.g., feelings of guilt following overeating). Binge eating and negative affect are often confounded in measures of binge eating (for a discussion see Sherry & Hall, 2009). We focused only on the concrete behavioural aspects of binge eating. Sherry and Hall (2009) modified the Binge Eating subscale of the Eating Disorder Diagnostic Scale (EDDS-BE; Stice et al., 2000) by removing two original items that referred to negative affect (e.g., post-binge emotionality) to avoid confounding binge eating and negative affect. Sherry and Hall's (2009) modified EDDS-BE is 7-item subscale that asks participants to respond to items (e.g., *There were times when I felt I couldn't stop eating or control what or how much I was eating. There were times when I ate large amounts of food when I didn't feel physically hungry*) on a 7-point response scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to indicate the degree to which they agreed with the statements

during the past 24 hours. Participants were provided with the following definition for *eating binges* and *binging*: “the rapid and uncontrollable consumption of a large amount of food in a short period of time, usually less than two hours.” This modified version of the EDDS-BE is consistent with the conceptualization of binge eating found in the PMOBE (Sherry & Hall, 2009), which has been empirically supported (e.g., Mackinnon et al., 2011; Sherry & Hall, 2009). The modified EDDS-BE has previously been utilized and has good internal consistency, predictive validity, and factorial validity (Mackinnon et al., 2011; Sherry & Hall, 2009).

Procedure

The study was reviewed by the REB at both Dalhousie University and Concordia University. Participants were recruited in Halifax Regional Municipality (HRM) and Dalhousie University in Halifax, as well as in Montreal and Concordia University in Montreal. The inclusion criteria were as follows: (1) between 18 and 25 years of age; (2) had consumed at least 12 alcoholic drinks in the past 12 months; and (3) have regular Internet access (criteria 1 & 2 were included to answer other research questions; Mackinnon et al., 2019). Advertising involved using online undergraduate participant pools, online classified ads, and flyers. Given that participants from either site (i.e., Halifax: 60.5% or Montreal: 39.5%) completed the same study protocol, data were combined into a single dataset.

Interested participants emailed our lab and were provided with more information about the study via email; those who agreed to participate provided their informed consent online. Participants completed an online baseline questionnaire on day 1 followed by online daily questionnaires completed on days 2 through 21. The baseline questionnaire took approximately 30 minutes to complete. Each daily questionnaire took approximately 15 minutes. Participants completed the baseline questionnaire before beginning the daily questionnaires. All

questionnaires were hosted on Interceptum (an online survey platform; <http://interceptum.com/p/en>).

Following completion of the baseline questionnaire, participants were sent an email containing a link to their daily questionnaires on days 2 through 21. These daily questionnaires asked participants about events that occurred in the past 24 hours, specifically, the time frame for daily questionnaires was from 4am one day to 4am the next day (e.g., “From 4am June 9 to 4am on June 10”). Participants were instructed to complete the questionnaires at the end of each day (i.e., right before bed). Daily questionnaires were available for a 48-hour period, so that if respondents missed the questionnaire on a specific day, they could make it up by filling out two daily questionnaires the following day. Participants were compensated with an Amazon gift card and/or course credit. Participants were debriefed via email.

Missing Data and Protocol Compliance

The average number of completed daily questionnaires was 16.16 ($SD = 4.68$) per person. Overall, data was collected for 4251 (80.82%) of the total number of *possible* daily questionnaires (i.e., 263 participants x 20 daily questionnaires = 5260 possible daily questionnaires). Of these, 150 daily questionnaires were completed outside of the scheduled window (i.e., completed between 24 to 48 hours after the email link was sent). The average number of questionnaires completed outside the scheduled window was 7.87 ($SD = 4.93$). Minimal data were missing for all measures (< 1% at an item-level) and missing data was handled using full information maximum likelihood.

Data Analytic Strategy

Total scores for scales were calculated with sums of all items in each subscale. Means, standard deviations, and bivariate correlations were calculated and reported at the between-

subjects level by taking the average of each variable across the 20-day period. Bivariate correlations were calculated at the within-subjects level using MPlus 8.0 (Muthén & Muthén, 2017). Internal consistency of each variable was assessed using a multilevel adaptation of Cronbach's alpha (Geldhof et al., 2014). Prior to hypothesis testing (RQ1, RQ2) we also subtracted the minimum value from SOP, SPP, OOP and binge eating behaviors (i.e., the number of items). This rescales variables so that the lowest possible score is zero. Zero-inflated negative binomial models (see below) require that the lowest score be zero and that all values are integers. The means for perfectionism variables reported in Table 1 and Figure 1 do not incorporate this transformation.

To assess the factorial validity of the daily measures prior to hypothesis testing, we conducted multilevel exploratory factor analyses using oblique rotation using robust MLR estimation for standard errors and fit indices. The syntax for all statistical analyses can be found in our online supplemental materials at <https://osf.io/5g6xa/>. We examined between- and within-subjects factor structures. A well-fitting model was defined as a CFI around .95, a RMSEA around .06, a SRMR around .08, and factor loadings $> .40$ (Kline, 2005).

Preliminary analyses revealed non-normal distribution for the key outcome variable, daily number of binge-eating behaviours (Figure 1). The daily binge eating behaviours variable had a positively skewed distribution with a disproportionately large number of zero³ values. Histograms of the raw data revealed that perfectionism variables were also zero-inflated in this dataset, though to a much lesser degree than binge eating behaviours (Figure 1). Zero-inflated negative binomial (ZINB) regression models are used to model data that contains an excess of

³ Though we have rescaled our variables such that the lowest score is zero, readers are reminded that there is no true zero value in these data. Zeroes should be interpreted as a participant response of "Strongly Disagree" to all items of a given subscale.

zeros relative to what is expected in a negative binomial distribution (Atkins & Gallop, 2007). ZINB models assume a mixture of two data-generating processes. For example, among participants who do occasionally engage in binge eating behaviors, there are some expected zero values in addition to non-zero values within any given day because people who binge eat typically do not do so every day. This part is modeled with the negative binomial regression portion of the model. However, in the data there are also “excess” zeroes over and above what we expect given a negative binomial distribution. The zero-inflated portion of the model allows us to predict these “excess” zeroes (i.e., those over-and-above what the negative binomial model expects). Thus, the model assumes that the excess zero values are generated by a different process than the negative binomial distributed data. This differs from hurdle models (e.g., see Hu et al., 2011 for a clear differentiation of these models) which model the zeroes separately from the integer data. Though the model is agnostic as to the true process underlying the excess zeroes, we believe that the most plausible data-generating process is that the excess zeroes are due to participants who virtually never binge eat (or virtually never endorse perfectionistic tendencies), and thus would never endorse any of the items in 20-day period. However, the excess zeroes could also represent some manner of response bias (e.g., a tendency to select all “strongly disagree” responses). In either case, partitioning out these excess zeroes seems prudent.

A structural equation model with ZINB outcome variables was created to test RQ1 and RQ2 simultaneously in a single model (Figure 2). Predictor variables were lagged variables (i.e., the previous day or $t-1$) for binge eating behaviours, SOP, SPP, and OOP. Outcomes were each of the four variables at time t (i.e., the day after the lagged variables). Cluster-robust standard errors were used to address non-independence (see McNeish et al., 2017 for a clear explanation of how this differs from various other methods). In the ZINB model, each outcome is partitioned

into two components: A logistic regression component, predicting excess zeroes and a negative binomial regression component predicting the negative binomially distributed data. ZINB models do not generate fit indices based on the overall chi-squared statistic like conventional structural equation models, so these are not reported.

Because the model is complex, and not all paths are part of hypotheses, Figure 2 is broken into four panels. The “Full Model” panel displays all the paths and covariances in the run model. “Autoregressive Paths” refer to variables at time $t-1$ predicting the same variables at time t , and it is expected these will be large positive relationships. “Vulnerability Effects” refer to RQ1, and test whether perfectionism variables predict increases in binge eating behaviours the next day. Finally, “Reverse Causal Direction” refers to RQ2 which tests whether binge eating behaviours predict increases in perfectionism scores the next day. All other paths in the model other than those in panels 2-4 (e.g., SOP_{t-1} predicting SPP_t) are neither hypothesized nor part of our research questions and are not reported in this paper. They are included in the full model only so that covariates are properly adjusted for in the analysis. However, the output for the full model with all coefficients are available on our OSF page for interested readers.

Because this study is secondary data analysis of a pre-existing dataset, post-hoc power analyses have limited utility and were not conducted. However, we provide confidence intervals around hypothesized estimates (Tables 2-3) so that the reader may assess the precision of our estimates.

Results

Descriptive Statistics

Means and standard deviations are in Table 1. Variables were generally positively intercorrelated at the between-subjects (r s from 0.16-0.65) and within-subjects (r s from 0.02-

0.53) levels (Table 1), excepting correlations between binge eating and SOP and OOP at the within-subject level. Intraclass correlations indicate the proportion of the variance available to be explained at the between-subjects level, with 1-ICC indicating the variance to be explained at the within-subjects level. Perfectionism variables were relatively stable over time (ICCs from .79-.82) while binge eating was comparatively more malleable (ICC = .60).

Internal Consistency

Internal consistency of each variable was assessed using a multilevel adaptation of Cronbach's alpha (Geldhof et al., 2014). Measures had adequate reliability at both the within-subjects (.77-.91) and between-subjects (.95-.99) levels (Table 1).

Multilevel Exploratory Factor Analyses

Initial multilevel exploratory factor analyses entering all 22 items found a model with four between-subjects factors and four within-subjects factors was the best fitting model. This model fit the data well, $\chi^2(298) = 2010.42, p < .0001, CFI = .94, RMSEA = .03, SRMR$ (within/between) = .02/.02. However, factor loadings suggested that one item (SPP1) cross-loaded on the SPP and SOP factors (Table S1). The multilevel exploratory factor analyses were re-ran with the poorly loading item (SPP1) removed and entered all 21 items simultaneously⁴. A model with four between- and four within-subjects factors was the best fitting model. This model fit the data well, $\chi^2(264) = 1753.13, p < .0001, CFI = .95, RMSEA = .03, SRMR$ (within/between) = .02/.02. Factor loadings suggested each item loaded well onto its respective factor with minimal cross-loadings (Table S2). Factor loadings on the expected factors were generally large at the within-subjects (from .59-.95) and between-subjects (from .65-1.01) levels.

⁴ This is consistent with a previous multilevel confirmatory factor analysis with these data (Kehayes & Mackinnon, 2019).

The poorly loading item from the initial multilevel factor analyses (i.e., SPP1) was not included in the descriptive statistics, internal consistency, or analyses for RQ1 or RQ2.

RQ1 Analyses

Zero-Inflated Negative Binomial Model

When looking at the negative binomial portion of the model, both binge eating behaviours and level of SPP the previous day predicted binge eating behaviours the next day; however, neither SOP nor OOP were statistically significant predictors of binge eating behaviours (Table 2). Interpreting effect size for the negative binomial distributed portion of the model is unintuitive. The exponentiated slope (i.e., the “rate ratio”) for SPP is 1.01. Thus, every 1 unit increase in SPP corresponds with approximately a 1% increase in next-day binge eating behaviour intensity, holding all other predictors constant. Because the metric of summed scores is somewhat arbitrary, thinking about effect sizes in standard deviation units might be helpful for readers. The standard deviation (SD) of SPP is ~7pts; thus, a one SD increase in SPP is associated with an ~7% increase in next day binge eating behaviour intensity. However, the confidence interval for e^b ranges from 1.003 to 1.02, so a 1 SD increase in SPP could be associated anywhere from a 1.4% increase in binge eating behaviour intensity to a 14% increase in the population.

When looking at the zero-inflated portion of the model, a one unit increase in binge eating behaviours meant that participants were 1.16⁵ times less likely to have an excess zero value for binge eating behaviours the next day, with a relatively precise confidence interval

⁵ In this section, we get this number by taking the inverse of e^b or the “odds ratio” ($1/0.860 = 1.16$) to improve interpretation. This is because in a zero-inflated model, we are predicting the excess zeroes; thus, a negative coefficient in the zero-inflated component of the model (Table 2) means as X increases, the number of zeroes for Y decrease. This is also how values for the 95% CI are reported in-text here.

width (i.e., from 1.20 – 1.13). None of the perfectionism variables were significantly associated with binge eating behaviour in the zero-inflated component of the model (Table 2).

RQ2 Analyses

Binge Eating Predicting Next-Day Perfectionism

We also ran our main analysis in the reverse direction (i.e., daily binge eating behaviour predicting next-day levels of perfectionism). We continued to specify zero-inflated negative binomial models due to the large number of the lowest possible values for each perfectionism variable (Figure 1). Results are depicted in Table 3. Broadly speaking, perfectionism had strong stability from day-to-day. In the negative binomial distributed portion of the model, previous day's perfectionism scores were moderate predictors of the next day's perfectionism scores for SOP ($e^b = 1.06$), SPP ($e^b = 1.08$), and OOP ($e^b = 1.07$). There was very strong stability from day-to-day in the zero-inflated portion of the model for SOP ($e^b = 0.78$), SPP ($e^b = 0.53$), and OOP ($e^b = 0.56$); as the prior day's perfectionism increased, it became increasingly unlikely that the next day's perfectionism would be an excess zero. However, previous day's binge eating behaviour did not predict next-day perfectionism in any of the models, after controlling for previous day's perfectionism scores (see Table 3; Thus, combined with the data in Table 2, it appears that SPP is a risk factor for binge eating behaviours, rather than the reverse.^{6 7}

Discussion

⁶ In a ZINB model, it is not possible to correlate endogenous variables (i.e., outcome variables), though exogenous variables (i.e, predictors) are correlated in Figure 2. As a robustness check, we ran a model where we removed the correlations between exogenous variables. All of the null hypothesis test conclusions of this analysis matched our reported results. See the OSF page for raw output from this analysis.

⁷ See the online supplementary materials and Tables S3, S4 and S5 for an analysis showing that binge eating behaviors are positively related to depressed affect and guilt.

The present study examined the associations between daily levels of perfectionistic dimensions and next-day binge eating behaviours among emerging adults, while controlling for previous-day binge eating behaviours. Findings indicated that higher daily SPP, SOP, and OOP did not predict excess zeroes in binge eating behaviours. However, SPP did predict next-day binge eating behaviours in the negative binomial portion of the model – higher SPP was positively associated with more binge eating behaviours the next day in the negative binomial distributed portion of the model. We also found that previous-day binge eating behaviours were strongly related to next day binge eating behaviours in the negative binomial distributed portion of the model. Moreover, as binge eating behaviours increased, the probability of participants having an excess zero value the next day decreased. We also examined an alternative model representing a state-effect model (i.e., eating disorder symptomatology causing short-term personality changes because of a current eating disorder; Lilenfeld et al., 2006), wherein binge eating behaviours confer risk for higher next-day perfectionism scores, while controlling for previous day perfectionism. In this model, we did not find evidence that binge eating behaviours predicted next-day perfectionism, while controlling for previous day perfectionism. Overall, the results of the present study provide evidence that perfectionism, and more specifically SPP, is a risk factor for increased binge eating behaviours in emerging adults.

Existing literature provides consistent evidence that self-critical perfectionism (which includes facets such as SPP) predicts binge eating (Bardone-Cone et al., 2007; Bardone-Cone et al., 2012). Some studies, including one experimental study and one 11-week longitudinal study, provide evidence that facets of rigid perfectionism are also positively associated with binge eating when SPP is not controlled for (Boone, Soenens, Vansteenkiste, et al., 2012; Fitzsimmons-Craft et al., 2012; Magson et al., 2019). However, the current study differs because

SOP and SPP were entered as simultaneous predictors in multilevel regression. Our findings are largely consistent with prior research, especially the more recent longitudinal studies that utilize weekly (Mackinnon et al., 2011) and daily diary surveys (Mushquash & Sherry, 2012; Sherry & Hall, 2009 showing that higher SPP is associated with binge eating. While our results contrast those of Fitzsimmons-Craft et al. (2012), who found that both SPP and SOP predicted an increase in binge eating intensity, those authors utilized a trait-level measurement of perfectionism instead of utilizing weekly—or like the present study, daily—state-level measurements of perfectionistic dimensions. It is possible that the dimensions of perfectionism are differentially related to binge eating at the trait- and state-level. Importantly, the studies that found that SOP was also associated with binge eating did not control for SPP during these analyses. Prior research has found that SOP is often positively correlated with psychopathology, but this relationship shrinks or becomes slightly negative when controlling for SPP (Limburg et al., 2017), which could explain why our analyses (which included both SPP and SOP in the same model) found that SOP was not associated with binge eating at a daily level.

Strengths and Limitations

This study was only the second empirical investigation into whether daily variations of perfectionistic dimensions predicted next-day binge eating behaviours and was the first to do so with multiple perfectionism dimensions (Musquash & Sherry, 2012). Additionally, the present study utilized statistical techniques (i.e., zero-inflated negative binomial multilevel regression analyses) that allowed us to examine two simultaneous data-generating processes: A negative binomial distribution and excess zeroes. Further, the present study also included an examination of the reverse causal model. The current findings provide evidence that SPP is a vulnerability for the intensity of binge eating behaviours.

Future research involving daily assessments must seek to identify factors that underscore the link between SPP and binge eating behavior. One potentially vital clue is found in the supplementary material accompanying this article; these data show that SPP was also linked with daily experiences of depressive affect. The daily experience of both negative affect and stress likely play key roles, especially among emerging adults who feel they must live up to impossible social expectations and standards while perhaps interpreting their binge eating behaviors as a form of self-regulatory failure that is clearly at odds with prescribed standards. This proposed sequence is in keeping with the notion of binge-eating behaviour as a form of escape from self-consciousness and aversive self-awareness (see Heatherton & Baumeister, 1991).

This study also had notable limitations. First, the study sample was relatively homogeneous in terms of ethnicity, socioeconomic status, education level, age, gender, and sex, which limits the generalizability of our findings. While it is likely that the nature of an online study led to a W.E.I.R.D. sample (i.e., Western, Educated, Industrialized, Rich, and Democratic; Henrich et al., 2010), an online study is one of the most effective and accurate ways to collect data for daily-diary methodology, especially over a 20-day period (Chatzitheochari et al., 2018). The homogeneity of our sample, especially in terms of age, was purposeful to answer other research questions regarding alcohol consumption (see Mackinnon et al., 2019), however it is worth noting that BED and subclinical symptoms typically develop during emerging adulthood (Favaro et al., 2019), making this an important age group to examine. While our sample included both men and women, our subsample of men was small (20.2%), so we did not examine gender/sex differences, nor did we include other genders (e.g., non-binary) thus we cannot be certain that these results are generalizable to the general population. Second, while our 20-day longitudinal design offers advantages, some authors suggest that a combination of event-level

(i.e., collecting reports immediately after binge episodes) and random sampling is the best way to examine the temporal dynamics of binge eating (Smyth et al., 2001). Third, we utilized a self-report measure of binge eating behaviours and self-report measures of eating disorder behaviours might be inaccurate. However, the use of daily diary methodology reduces recall biases and thus may have led to more accurate self-reporting on binge eating behaviours (Munsche et al., 2009). Future research might benefit from supplementing self-report measures of binge eating behaviours with the assessment of observable binge eating behaviours. Fourth, we did not assess or examine descriptive information regarding eating pathology in the present sample. With no information related to clinical severity of eating behaviours, we are unable to determine whether participants belonged to a non-clinical or sub-clinical group. This limits generalizability of study the findings to individuals who meet clinical criteria for eating disorder diagnoses, including BED. Finally, we believe that excess zeroes in binge eating behaviours (and to a lesser extent, our perfectionism variables) were generated in this dataset due to a subset of participants who virtually never engage in binge eating behaviours (or perfectionistic thoughts) and thus would never endorse items in our 20-day timeframe. However, we do not have data to support this contention (e.g., eating disorder diagnoses), so alternative explanations might drive the zero-inflated portion of the data, such as response bias.

Conclusions

In sum, this study provides additional evidence that at a daily level, SPP is a vulnerability for engaging in more binge eating behaviours. Results of this study have clear practical implications. For example, counselors and clinicians working with emerging adults may want to focus on addressing aspects of SPP and/or self-critical perfectionism, especially at a daily level, to reduce harmful binge eating behaviours and maladaptive reactions and responses to stressful

situations in general but especially those that involve actual or perceived social evaluation. Other potential themes to target include the tendency for people with high socially prescribed perfectionism to attach irrational importance to being perfect and to have an externalized view of the self that increases their hypersensitivity to social cues and social feedback (for a discussion, see Flett et al., 2021). Perfectionism is a pervasive and transdiagnostic risk factor for eating disorder symptoms more broadly (Fairburn et al., 2003). Additionally, if SPP leads to binge eating behaviours via binge eating triggers (i.e., interpersonal discrepancies, low interpersonal esteem, depressive affect, and dietary restraint) as suggested by the PMOBE (Sherry & Hall, 2009), then perfectionism can be thought of as a vulnerability factor embedded within a network of interconnected symptoms. In this way, addressing perfectionism in the clinical context may have downstream effects on clinical presentations of eating disorder symptoms. In line with this, Bardone-Cone et al (2010) find that perfectionism decreases as people diagnosed with eating disorders begin to recover. Advanced statistical modelling can help us better understand the dynamics of the perfectionism-binge eating behaviour relationship, such as temporal precedence, magnitudes of effects, and differentiating between presence and intensity of symptoms with zero-inflated negative binomial modelling. It is hoped that basic research such as this can contribute in some small way to the development of treatments for people suffering from binge eating symptoms.

References

- American Psychiatric Association,(2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Atkins, D. C., Baldwin, S. A., Zheng, C., Gallop, R. J., & Neighbors, C. (2013). A tutorial on count regression and zero-altered count models for longitudinal substance use data. *Psychology of Addictive Behaviors, 27*(1), 166-177. <https://doi.org/10.1037/a0029508>
- Bardone-Cone, A. M., Brownstone, L. M., Higgins, M. K., Harney, M. B., & Fitzsimmons-Craft, E. E. (2012). Predicting difficulties controlling overeating and drinking when experiencing negative affect in undergraduate women. *Journal of Social and Clinical Psychology, 31*(10), 1051-1073. <https://doi.org/10.1521/jscp.2012.31.10.1051>
- Bardone-Cone, A. M., Sturm, K., Lawson, M. A., Robinson, D. P., & Smith, R. (2010). Perfectionism across stages of recovery from eating disorders. *International Journal of Eating Disorders, 43*(2), 139-148. <https://doi.org/10.1002/eat.20674>
- Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology Review, 27*(3), 384-405. <https://doi.org/10.1016/j.cpr.2006.12.005>
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*(1), 579-616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Boone, L., Soenens, B., Mouratidis, A., Vansteenkiste, M., Verstuyf, J., & Braet, C. (2012). Daily fluctuations in perfectionism dimensions and their relation to eating disorder

symptoms. *Journal of Research in Personality*, 46(6), 678-687.

<https://doi.org/10.1016/j.jrp.2012.08.001>

Boone, L., Soenens, B., Vansteenkiste, M., & Braet, C. (2012). Is there a perfectionist in each of us? An experimental study on perfectionism and eating disorder symptoms. *Appetite*, 59(2), 531-540. <https://doi.org/10.1016/j.appet.2012.06.015>

Chatzitheochari, S., Fisher, K., Gilbert, E., Calderwood, L., Huskinson, T., Cleary, A., & Gershuny, J. (2018). Using new technologies for time diary data collection: Instrument design and data quality findings from a mixed-mode pilot survey. *Social Indicators Research*, 137, 379-390. <https://doi.org/https://doi.org/10.1007/s11205-017-1569-5>

Cockell, S., Hewitt, P., Seal, B., Sherry, S., Goldner, E., Flett, G., & Remick, R. (2002). Trait and self-presentational dimensions of perfectionism among women with anorexia nervosa. *Cognitive Therapy and Research*, 26(2), 745-758.

<https://doi.org/https://doi.org/10.1023/A:1021237416366>

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy*, 41(5), 509-528. [https://doi.org/https://doi.org/10.1016/S0005-7967\(02\)00088-8](https://doi.org/https://doi.org/10.1016/S0005-7967(02)00088-8)

Favaro, A., Busetto, P., Collantoni, E., & Santonastaso, P. (2019). The age of onset of eating disorders. In G. de Girolamo, P. McGorry, & N. Sartorius (Eds.), *Age of onset of mental disorders* (pp. 203-216). Springer. https://doi.org/https://doi.org/10.1007/978-3-319-72619-9_11

Fitzsimmons-Craft, E. E., Bardone-Cone, A. M., Brownstone, L. M., & Harney, M. B. (2012). Evaluating the roles of anxiety and dimensions of perfectionism in dieting and binge

eating using weekly diary methodology. *Eating Behaviors*, 13(4), 418-422.

<https://doi.org/10.1016/j.eatbeh.2012.06.006>

Flett, G. L., Hewitt, P. L., Nepon, T., Sherry, S. B., & Smith, M. L. (2021). *The destructiveness and public health significance of socially prescribed perfectionism: A review, analysis, and conceptual extension*. Manuscript submitted for publication.

Franche, V., & Gaudreau, P. (2016). Integrating dispositional perfectionism and within-person variations of perfectionism across life domains into a multilevel extension of the 2×2 model of perfectionism. *Personality and Individual Differences*, 89, 55-59.

<https://doi.org/10.1016/j.paid.2015.09.046>

Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods*, 19(1), 72-91.

<https://doi.org/10.1037/a0032138>

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, 110(1), 86-108.

Henrich, J., Heine, S., Steven, J., & Norenzayan, A. (2010). Beyond WEIRD: Towards a broad-based behavioral science. *Behavioral and Brain Sciences*, 33(2-3), 61-135.

<https://doi.org/10.1017/S0140525X10000725>

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(3), 456-470.

<https://doi.org/https://doi.org/10.1037/0022-3514.60.3.456>

- Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. (2006). Trait perfectionism dimensions and suicidal behavior. In T. E. Ellis (Ed.), *Cognition and suicide: Theory, research, and therapy* (pp. 215–235). Washington, DC: American Psychological Association.
- Hewitt, P. L., Habke, A. M., Lee-Baggley, D. L., Sherry, S. B., & Flett, G. L. (2008). The impact of perfectionistic self-presentation on the cognitive, affective, and physiological experience of a clinical interview. *Psychiatry: Interpersonal and Biological Processes*, *71*(2), 93-122. <https://doi.org/10.1521/psyc.2008.71.2.93>
- Hu, M. C., Pavlicova, M., & Nunes, E. V. (2011). Zero-inflated and hurdle models of count data with extra zeros: examples from an HIV-risk reduction intervention trial. *The American Journal of Drug and Alcohol Abuse*, *37*, 367-375.
<https://doi.org/10.3109/00952990.2011.597280>
- Javaras, K. N., Pope, H. G., Lalonde, J. K., Roberts, J. L., Nillni, Y. I., Laird, N. M., Bulik, C. M., Crow, S. J., Mcelroy, S. L., Walsh, B. T., Tsuang, M. T., Rosenthal, N. R., & Hudson, J. I. (2008). Co-occurrence of binge eating disorder with psychiatric and medical disorders. *The Journal of Clinical Psychiatry*, *69*(2), 266-273.
<https://doi.org/https://doi.org/10.4088/jcp.v69n0213>
- Kärkkäinen, U., Mustelin, L., Raevuori, A., Kaprio, J., & Keski-Rahkonen, A. (2018). Do disordered eating behaviours have long-term health-related consequences? *European Eating Disorders Review*, *26*(1), 22-28. <https://doi.org/10.1002/erv.2568>
- Kehayes, I.-L. L., & Mackinnon, S. P. (2019). Investigating the relationship between perfectionistic self-presentation and social anxiety using daily diary methods: A replication. *Collabra: Psychology*, *5*(1), 33-46.
<https://doi.org/http://doi.org/10.1525/collabra.257>

- Kline, T. J. B. (2005). *Psychological testing: A practical approach to design and evaluation*. Sage. <https://doi.org/https://dx.doi.org/10.4135/9781483385693>
- Lilenfeld, L. R., Wonderlich, S., Riso, L. P., Crosby, R., & Mitchell, J. (2006). Eating disorders and personality: A methodological and empirical review. *Clinical Psychology Review*, 26(3), 299-320. <https://doi.org/10.1016/j.cpr.2005.10.003>
- Limburg, K., Watson, H. J., Hagger, M. S., & Egan, S. J. (2017). The relationship between perfectionism and psychopathology: A meta-analysis. *Journal of Clinical Psychology*, 73(10), 1301-1326. <https://doi.org/10.1002/jclp.22435>
- Mackinnon, S. P., Battista, S. R., Sherry, S. B., & Stewart, S. H. (2014). Perfectionistic self-presentation predicts social anxiety using daily diary methods. *Personality and Individual Differences*, 56, 143-148. <https://doi.org/10.1016/j.paid.2013.08.038>
- Mackinnon, S. P., Curtis, R. & O'Connor, R. (accepted). A Tutorial in longitudinal measurement invariance and cross-lagged panel models using lavaan. *Metapsychology*. Preprint: <https://doi.org/10.31234/osf.io/tkzrb>
- Mackinnon, S. P., Kehayes, I., Leonard, K., Fraser, R. & Stewart, S. H. (2017). Perfectionistic concerns, social negativity and subjective well-being: A test of the social disconnection model. *Journal of Personality*, 85, 326-340. <https://doi.org/10.1111/jopy.12243>
- Mackinnon, S. P., Ray, C. M., Firth, S. M., & O'Connor, R. M. (2019). Perfectionism, negative motives for drinking, and alcohol-related problems: A 21-day diary study. *Journal of Research in Personality*, 78, 177-188. <https://doi.org/https://doi.org/10.1016/j.jrp.2018.12.003>

- Mackinnon, S. P., Ray, C. M., Firth, S. M., & O'Connor, R. M. (2021). Data from "Perfectionism, Negative Motives for Drinking, and Alcohol-Related Problems: A 21-day Diary Study". *Journal of Open Psychology Data*, 9(1), 1. DOI: <http://doi.org/10.5334/jopd.44>
- Mackinnon, S. P., Sherry, S. B., Graham, A. R., Stewart, S. H., Sherry, D. L., Allen, S. L., Fitzpatrick, S., & McGrath, D. S. (2011). Reformulating and testing the perfectionism model of binge eating: A short-term, three-wave longitudinal study. *Journal of Counseling Psychology*, 58, 630-646. <https://doi.org/10.1037/a0025068>
- Magson, N. R., Oar, E. L., Fardouly, J., Johnco, C. J., & Rapee, R. M. (2019). The preteen perfectionist: An evaluation of the perfectionism social disconnection model. *Child Psychiatry & Human Development*, 50(6), 960-974. <https://doi.org/10.1007/s10578-019-00897-2>
- McNeish, D., Stapleton, L. M., & Silverman, R. D. (2017). On the unnecessary ubiquity of hierarchical linear modeling. *Psychological Methods*, 22, 114-140. <https://doi.org/10.1037/met0000078>
- Munsch, S., Meyer, A. H., Milenkovic, N., Schlup, B., Margraf, J., & Wilhelm, F. H. (2009). Ecological momentary assessment to evaluate cognitive-behavioral treatment for binge eating disorder. *International Journal of Eating Disorders*, 42(7), 648-657. <https://doi.org/10.1002/eat.20657>
- Mushquash, A. R., & Sherry, S. B. (2012). Understanding the socially prescribed perfectionist's cycle of self-defeat: A 7-day, 14-occasion daily diary study. *Journal of Research in Personality*, 46(6), 700-709. <https://doi.org/10.1016/j.jrp.2012.08.006>

- Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus User's Guide. Eighth Edition*. Muthén & Muthén.
- Pratt, E. M., Telch, C. F., Labouvie, E. W., Wilson, G. T., & Agras, W. S. (2001). Perfectionism in women with binge eating disorder. *International Journal of Eating Disorders*, 29(2), 177-186. [https://doi.org/10.1002/1098-108X\(200103\)29:2<177::AID-EAT1007>3.0.CO;2-X](https://doi.org/10.1002/1098-108X(200103)29:2<177::AID-EAT1007>3.0.CO;2-X)
- Sehm, M., & Warschburger, P. (2018). Prospective associations between binge eating and psychological risk factors in adolescence. *Journal of Clinical Child & Adolescent Psychology*, 47(5), 770-784. <https://doi.org/10.1080/15374416.2016.1178124>
- Sherry, S. B., & Hall, P. A. (2009). The perfectionism model of binge eating: Tests of an integrative model. *Journal of Personality and Social Psychology*, 96(3), 690-709. <https://doi.org/10.1037/a0014528>
- Smith, M. M., Saklofske, D. H., Stoeber, J., & Sherry, S. B. (2016). The big three perfectionism scale. *Journal of Psychoeducational Assessment*, 34(7), 670-687. <https://doi.org/10.1177/0734282916651539>
- Smith, M. M., Sherry, S. B., Gautreau, C. M., Stewart, S. H., Saklofske, D. H., & Mushquash, A. R. (2017). Are perfectionistic concerns an antecedent of or a consequence of binge eating, or both? A short-term four-wave longitudinal study of undergraduate women. *Eating Behaviors*, 26, 23-26. <https://doi.org/10.1016/j.eatbeh.2017.01.001>
- Smyth, J., Wonderlich, S., Crosby, R., Miltenberger, R., Mitchell, J., & Rorty, M. (2001). The use of ecological momentary assessment approaches in eating disorder research. *International Journal of Eating Disorders*, 30(1), 83-95. <https://doi.org/https://doi.org/10.1002/eat.1057>

Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the eating disorder diagnostic scale: A brief self-report measure of anorexia, bulimia, and binge-eating

disorder. *Psychological Assessment, 12*(2), 123-131. <https://doi.org/10.1037//1040-3590.12.2.123>

Stoeber, J. (2018). Comparing two short forms of the Hewitt–Flett multidimensional perfectionism scale. *Assessment, 25*(5), 578-588.

<https://doi.org/10.1177/1073191116659740>

Table 1*Bivariate Correlations, Means, Standard Deviations, and Internal Consistencies*

	1	2	3	4
1. SOP Total	—	0.65***	0.48***	0.16*
2. SPP Total ^a	0.52***	—	0.53***	0.27***
3. OOP Total	0.44***	0.53***	—	0.16*
4. BES Total	0.02	0.06*	0.03	—
M (SD)	18.49 (8.38)	12.60 (6.75)	14.37 (7.23)	5.93 (9.97)
α_{within}	0.87	0.77	0.81	0.91
α_{between}	0.97	0.95	0.95	0.99
ICC	0.79	0.83	0.79	0.60

Note. Between-subjects correlations are above the diagonal, and within-subjects correlations are below the diagonal. SOP = Self-Oriented Perfectionism; SPP = Socially Prescribed Perfectionism; OOP = Other-Oriented Perfectionism. ICC = Intraclass correlation. Means, standard deviations, internal consistencies, and ICCs for each variable are listed at the bottom of the table.

^a Item SPP1 was removed before creating the sum total score for SPP used in these analyses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Zero-Inflated Negative Binomial (ZINB) Model Results Examining Daily Perfectionism and Binge Eating Predicting Next-Day Binge Eating (Vulnerability Effects)

Effect	b	SE	p	e ^b	95% CI (e ^b)
Negative Binomial (Count) Portion					
Previous-Day SOP Total	-0.003	0.004	.416	0.997	[0.988 – 1.005]
Previous-Day SPP Total	0.013	0.005	.013	1.014	[1.003 – 1.024]
Previous-Day OOP Total	0.001	0.004	.337	1.001	[0.994 – 1.009]
Previous-Day BES Total	0.040	0.002	< .001	1.041	[1.036 – 1.046]
Zero-Inflated Portion (Predicting Zeroes)					
Previous-Day SOP Total	-0.013	0.012	.280	0.987	[0.964 – 1.010]
Previous-Day SPP Total	-0.022	0.015	.137	0.978	[0.949 – 1.007]
Previous-Day OOP Total	0.014	0.013	.292	1.014	[0.988 – 1.040]
Previous-Day BES Total	-0.151	0.014	< .001	0.860	[0.836 – 0.884]

Note. The negative binomial model examined whether previous-day perfectionism and binge eating behaviours predicted the *intensity* of next-day binge eating behaviours. The zero-inflated model examined whether previous-day perfectionism and binge-eating behaviours predicted the excess zeros in binge eating behaviours, thus a negative coefficient in this model means that as previous-day perfectionism and/or binge eating increases, the number of days that binge eating is absent decreases. CI = confidence interval; SOP = Self-Oriented Perfectionism; SPP = Socially Prescribed Perfectionism; OOP = Other-Oriented Perfectionism; BES = Binge Eating Scale. Item SPP1 was removed before creating the sum total score for SPP used in these analyses.

Table 3*Zero-Inflated Negative Binomial (ZINB) Model Results When Predicting Next-Day Perfectionism**(Reverse Causal Model)*

Effect	b	SE	p	e ^b	95% CI (e ^b)
Negative Binomial Portion Predicting SOP					
Previous-Day BES Total	<0.001	0.001	.669	1.000	[0.999, 1.001]
Previous-Day SOP Total	0.055	0.002	< .001	1.056	[1.053, 1.060]
Zero-Inflated Portion (Predicting Excess Zeroes in SOP)					
Previous-Day BES Total	-0.006	0.011	.585	0.994	[0.973, 1.015]
Previous-Day SOP Total	-0.252	0.046	< .001	0.777	[0.707, 0.848]
Negative Binomial Portion Predicting SPP					
Previous-Day BES Total	0.001	0.001	.207	1.001	[1.000, 1.002]
Previous-Day SPP Total	0.077	0.002	< .001	1.080	[1.075, 1.084]
Zero-Inflated Portion (Predicting Excess Zeroes in SPP)					
Previous-Day BES Total	-0.018	0.010	.069	0.982	[0.964, 1.001]
Previous-Day SPP Total	-0.633	0.108	< .001	0.531	[0.418, 0.643]
Negative Binomial Portion Predicting OOP					
Previous-Day BES Total	<0.001	0.001	.951	1.000	[0.999, 1.002]
Previous-Day OOP Total	0.067	0.002	< .001	1.069	[1.064, 1.074]
Zero-Inflated Portion (Predicting Excess Zeroes in OOP)					
Previous-Day BES Total	-0.013	0.012	.269	0.987	[0.964, 1.010]
Previous-Day OOP Total	-0.575	0.070	< .001	0.563	[0.486, 0.639]

Note. SOP = Self-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism; OOP = Other-Oriented Perfectionism; BES = Binge Eating.

Figure 1

Histograms for Daily Binge Eating and Perfectionistic Dimensions

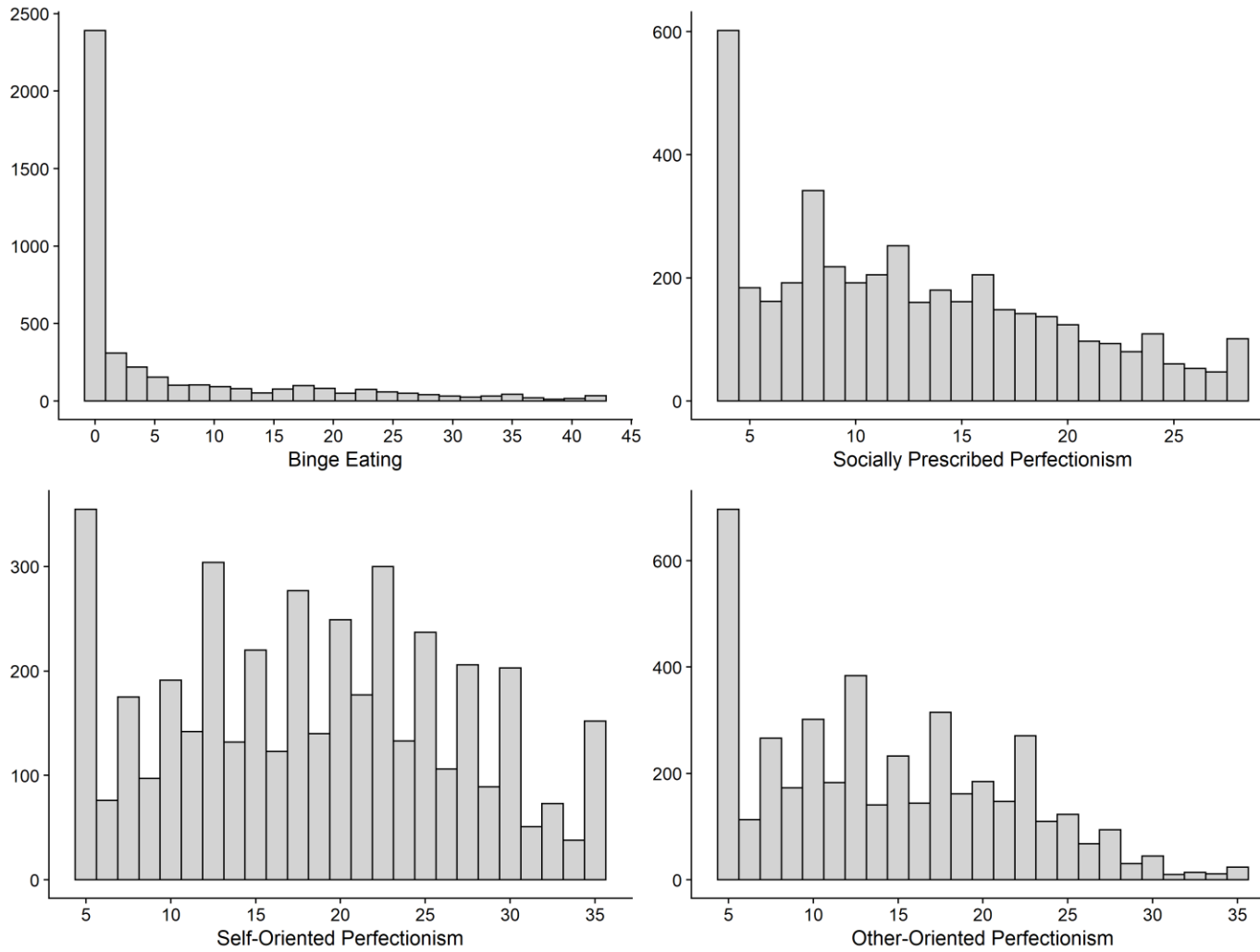
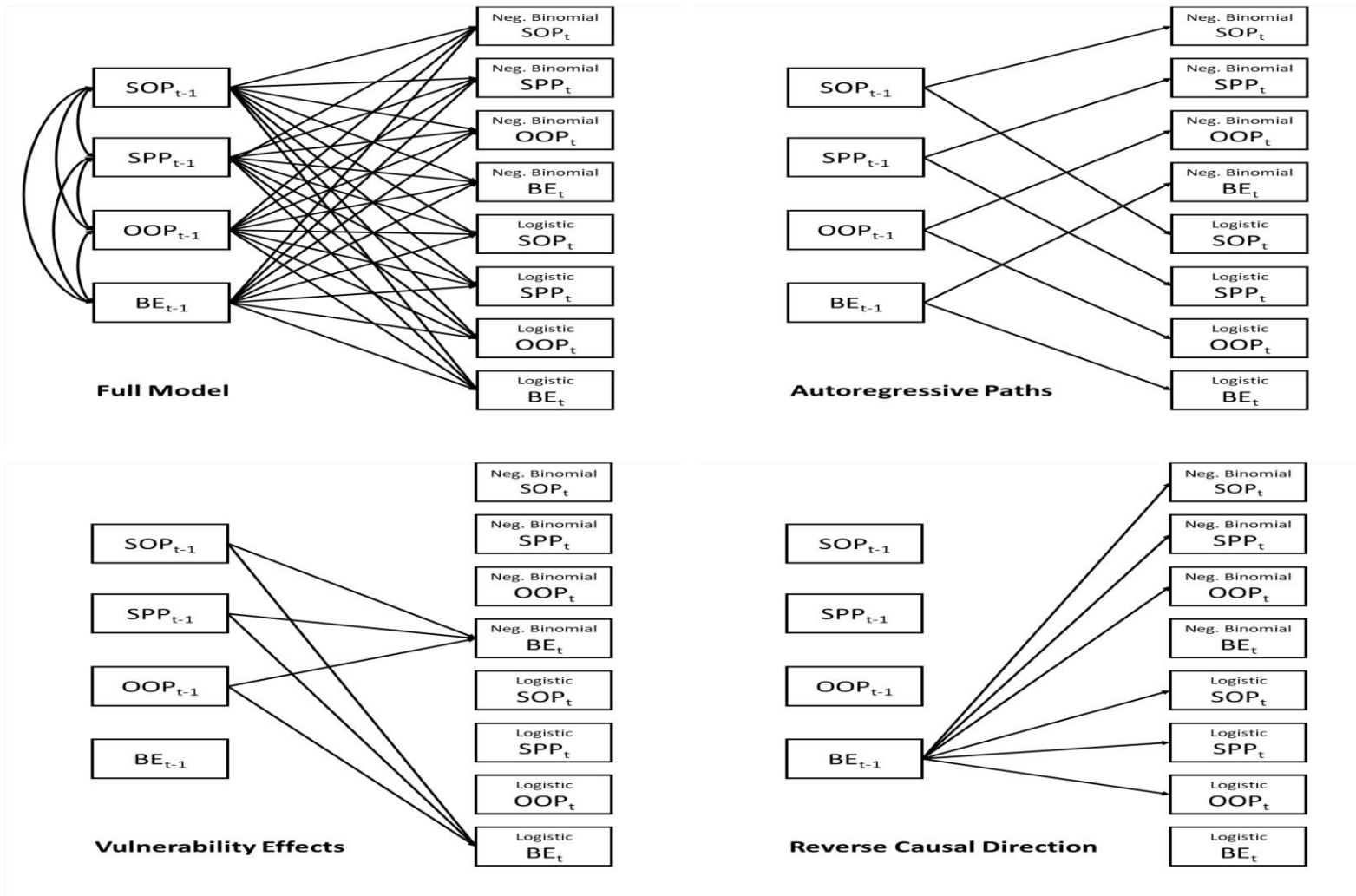


Figure 2

Depiction of Tested Zero-Inflated Negative Binomial Structural Equation Model



Note. SOP = Self-Oriented Perfectionism; SPP = Socially Prescribed Perfectionism; OOP = Other-Oriented Perfectionism; BE = Binge Eating Behaviors. Subscript t-1 indicates a lagged variable (previous day), and subscript t indicates the current day.