



Examining Cognitive Fusion and Psychological Inflexibility as Predictors of Binge Eating



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INTRODUCTION

Psychological inflexibility, as assessed by the AAQ-II (Bond et al., 2006), has been linked to eating disorder pathology in previous research (Masuda, Boone, and Timko, 2011). However, the findings are mixed and the relationship requires more examination (Masuda et al., 2014). While the AAQ-II is a general process measure for psychological inflexibility and experiential avoidance, measures of other more specific components of the psychological inflexibility model have recently been developed. The Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) is a new, more specific inflexibility process measure of interest within the realm of eating pathology that explicitly targets cognitive fusion, an increased attachment to/believability of cognitions or thoughts. This initial validation study found that the CFQ had adequate reliability and validity within college student populations (Gillanders et al., 2014). Additionally, discrepancies have been identified in factor loadings on the CFQ and AAQ-II, calling into question whether the CFQ captures a distinct component of psychological inflexibility. The present, ongoing online survey study conducted with college students at a mid-sized university administered a measure of binge eating, the AAQ-II, CFQ, and other known predictors of eating pathology (rumination and negative affect). The current study seeks to address whether these measures of psychological inflexibility and cognitive fusion predict binge eating more accurately than other known predictors. In addition, the study also seeks to address whether the CFQ is able to capture an additional proportion of variance beyond the AAQ-II.

METHODS

- Baseline N=120, Follow-up N=114, with 39% male, age = 22.1(5.4), 92.6% =Caucasian
- A total sample of 400 college students will be recruited from USU during Fall 2014.
- Inclusion Criteria: 18 years of age or older and currently attending USU.
- Recruitment: SONA research platform, flyers, and class announcements offering extra credit for participation.
- Participants completed 2 online assessments, four weeks apart through Qualtrics survey software.
- Measures Used:
 - **Eating Disorder Examination Questionnaire-Binge (EDE-Q Binge; Fairburn & Beglin, 1995):** assesses binge eating behavior.
 - **Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011):** measures psychological inflexibility and experiential avoidance.
 - **Cognitive Fusion Questionnaire (CFQ; Gillanders et al., in press):** assesses cognitive fusion.
 - **Ruminative Thought Style (RTS; Brinker & Dozois, 2009):** measures rumination as a problematic emotion regulation strategy.
 - **Positive and Negative Affect Schedule – Negative Affect (PANAS-NA; Watson, Clark, & Tellegen, 1988):** used to test whether psychological flexibility processes predict psychological problems above and beyond general negative emotionality.

RESULTS

- All four measures are highly correlated, which present a challenge of autocollinearity (Table 2).

Table 1: Correlation table with each measure at baseline. (All significant at $p < .001$.)

Measure	AAQ	CFQ	RTS	PANAS
AAQ-II	1	0.828	0.676	0.771
CFQ	0.828	1	0.764	0.722
RTS	0.676	0.764	1	0.636
PANAS-NA	0.771	0.722	0.636	1

- Although all predictors are significant at baseline, only cognitive fusion (CFQ; $p < 0.05$) and rumination (RTS; $p < .05$) are predictive of later binge eating behavior when looking at each predictor separately.
- Separate Poisson regressions were run for each predictor at baseline, and follow-up, controlling for baseline binge eating:
 - **Psychological Flexibility Predictors**
 - AAQ-II
 - baseline: $\beta = 0.042$, $p < .001$
 - follow-up: $\beta = 0.016$, $p = .163$
 - CFQ
 - Baseline: $\beta = 0.058$, $p < .001$
 - Follow-up: $\beta = 0.03$, $p = .002$
 - **Competing Predictors**
 - RTS
 - Baseline: $\beta = 0.031$, $p < .001$
 - Follow-up: $\beta = 0.014$, $p = .008$
 - PANAS-NA
 - Baseline: $\beta = 0.076$, $p < .001$
 - Follow-up: $\beta = 0.03$, $p = .065$

Table 2: Poisson regression at follow-up, controlling for baseline binge eating (multivariate)

Predictor	Coefficient	p-value
AAQ-II	-0.061	0.023
CFQ	0.058	0.008
RTS	0.005	0.549
PANAS-NA	0.017	0.524

Table 3: Poisson regression at follow-up, controlling for baseline binge eating, omitting PANAS-NA. (multivariate)

Predictor	Coefficient	p-value
AAQ-II	-0.053	0.025
CFQ	0.059	0.008
RTS	0.006	0.488

Table 4: Poisson regression at follow-up, controlling for baseline binge eating, omitting PANAS-NA and RTS. (multivariate)

Predictor	Coefficient	p-value
AAQ-II	-0.051	0.03
CFQ	0.066	0.001

- Although the RTS and CFQ both appear predictive of future binge eating reports, the CFQ is stronger than the RTS, making the CFQ a more central measure of interest within analysis (Tables 2-4).
- The AAQ-II was also significant, but switched directions, possibly due to the effects of highly correlated predictors.
- A measure of cognitive fusion appears to account for an additional proportion of variance in binge eating that is not reflected in the relationship with the AAQ. Cognitive fusion appears as a stronger predictor for binge eating behavior than a specific dysfunctional cognitive pattern, like rumination (RTS) or negative affect (PANAS-NA).

CONCLUSIONS

The CFQ appears as a functional and appropriate measure for use in clinical and non-clinical populations. It can also be a helpful tool in tracking client process, making it useful in informing treatment rationale. Of the measures included in this analysis, the CFQ appears to provide a greater predictive power for binge eating behavior. Using the CFQ allows for a more targeted route in tracking client process related specifically to cognitive fusion, indicating that this measure could be a vital component to practitioners using ACT. Not surprisingly, the CFQ has some overlap with the AAQ-II since cognitive fusion exists as a core process within psychological inflexibility. However, the CFQ is effective at pinpointing specific behavior around cognitive fusion, a process that appears to be significantly related to binge-eating behavior. In general, these findings increase our understanding of the role of cognitive fusion within the model of psychological flexibility when analyzed specifically to disordered behaviors (e.g., binge eating). The implications also suggest that development of more specific process measures, such as the CFQ, should continue in order to strengthen measurement and application of the ACT hexaflex processes in clinical and research settings.

LIMITATIONS AND FUTURE DIRECTIONS

- Continued research testing multiple measures that capture different psychological flexibility processes will be important for monitoring therapeutic process.
- The current sample was not a clinical population and contained two longitudinal survey data points. Data will be reassessed when collection is finished in the Fall. Future research could focus on collecting multiple follow up time points to examine whether the CFQ is consistent overtime in predicting binge eating behavior and other eating pathology.
- Although the current study analyzed the use of the CFQ within binge eating, there may be alternative components of psychological flexibility that also hold predictive power (e.g., mindfulness, acceptance, and values).
- There is also importance in understanding the CFQ in its predictive ability for other presenting problems, highlighting the measure's ability for transdiagnostic application.
- Additionally, it may be useful to examine the predictive ability differences between the AAQ-II and the CFQ within the context of other presentations.

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