



Social anxiety and depressive symptoms: An examination of the moderating role of cognitive fusion using a diverse sample

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INTRODUCTION

Anxiety is the most frequently stated reason (i.e. 48.2%) college students seek out counseling services (LeViness, Bershad, & Gorman, 2017). Social Anxiety Disorder (SAD) specifically has a relatively high prevalence rate, with 25% of a sample of Mid-Atlantic university students reporting high levels of social anxiety (Lipton, Weeks, Daruwala, & De Los Reyes, 2016). Social anxiety is associated with lower average grades (Baptista et al., 2012), dropping out of school (Stein & Kean, 2000), dysfunctional interpersonal relationships (Stein & Kean, 2000), and lower overall quality of life (Ghaedi, Tavoli, Bakhtiari, Melyani, & Sahragard, 2009; Stein & Kean, 2000). Social anxiety is also associated with depressive symptoms (Carnes & Winer, 2017; Dell'Osso et al., 2014; Flynn, Bordieri, & Berkout, 2019; Ledley et al., 2005). The relationship between social anxiety and depressive symptoms may be due to behavioral avoidance of situations that promote distress, which can lead to isolation and loneliness, thereby exacerbating both anxious and depressive symptoms (Moitra, Herbert & Forman, 2008).

There must be moderators involved in the relationship between social anxiety and depressive symptoms. One moderator may be cognitive fusion. Carnes and Winer (2017) defined cognitive fusion as the "tendency for behavior to be overly regulated and influenced by cognition." Cognitive fusion is one of six core processes targeted to increase psychological flexibility in acceptance and commitment therapy (ACT; Gillanders et al., 2014). A recent study found that cognitive fusion predicts both social anxiety and depressive symptoms (Krafft, Haeger, & Levin, 2019). The current study aimed to extend this literature by examining whether cognitive fusion moderates the relationship between social anxiety and depressive symptoms among college students.

METHOD

Participants

961 undergraduate students:

Age: 16-70 years old (M = 22.12, SD = 5.82)

Class status: 53.5% freshman; 27% sophomore; 15.3% junior; 4.2% senior

Gender identity: 61.1% female; 37.8% male; 0.7% gender queer/nonconforming; 0.2% trans male/man; 0.2% trans female/woman

Race and ethnicity: 54.4% Caucasian; 26.7% Latino/Hispanic; 6.6% more than one of the above; 5.4% African American; 4.4%; 1.9% other; Asian/Pacific Islanders; 0.6% Native American/Alut

Measures

Cognitive Fusion Questionnaire (CFQ). The CFQ (Gillanders et al., 2014) is a 7-item measure of cognitive fusion, with higher scores indicating higher levels of cognitive fusion.

Social Phobia Scale (SPS). The SPS (Mattick & Clarke, 1998) assesses fears of being scrutinized during routine activities (eating, drinking, writing, etc.). Higher scores indicate greater levels of fear.

Social Interaction Anxiety Scale (SIAS). The SIAS (Mattick & Clarke, 1998) assesses fears of social interaction, with higher scores indicating greater levels of fear.

Depression, Anxiety, Stress Scale-21 (DASS-21). The DASS-21 (Lovibond & Lovibond, 1995) is a self-report measure that contains the following three subscales: depression, anxiety, and stress. The depression subscale of the DASS-21 was used in the current study. Higher scores on the subscale indicate greater levels of depression.

Procedure

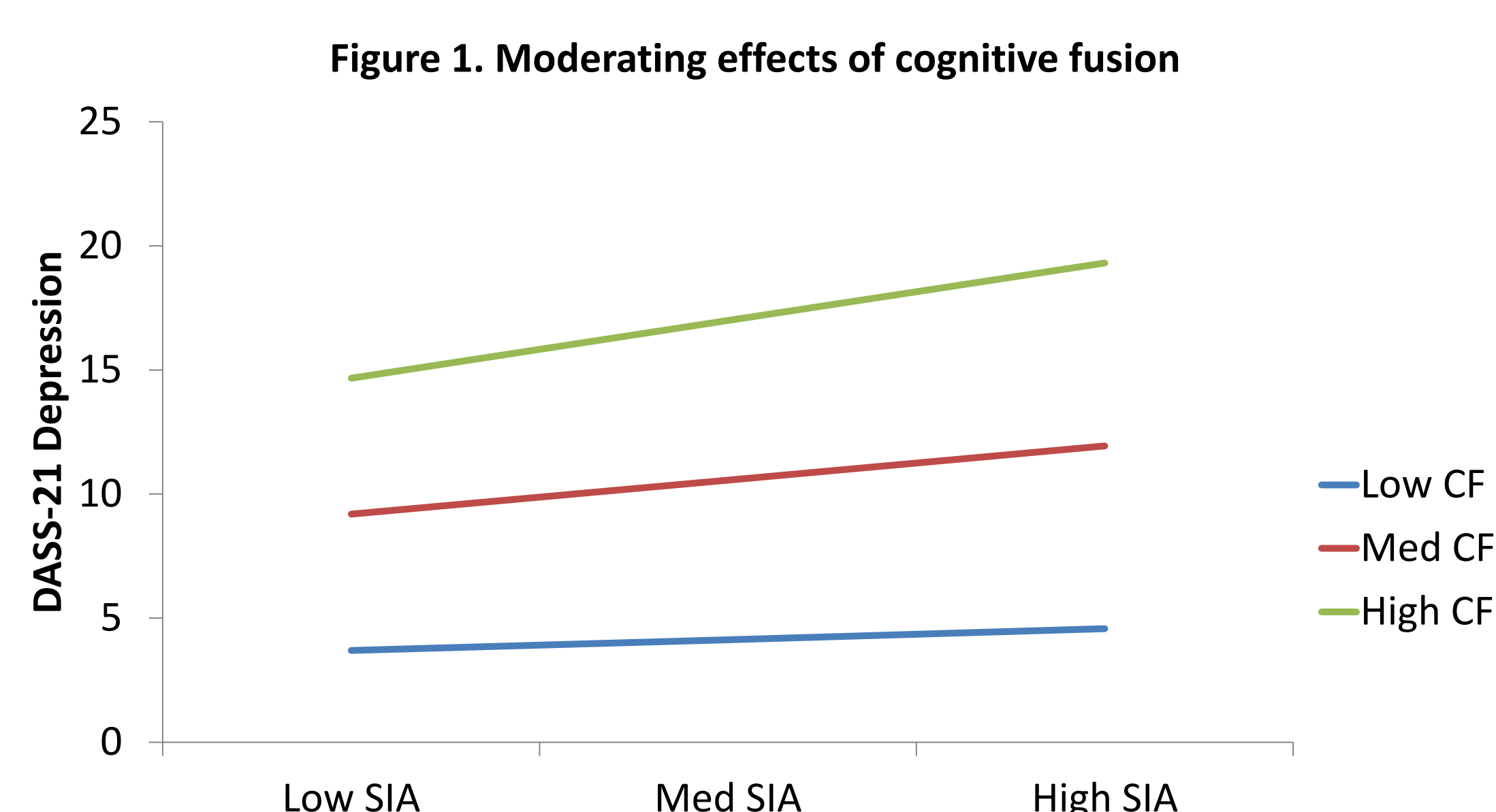
Participants completed a series of questionnaires on an online format.

RESULTS

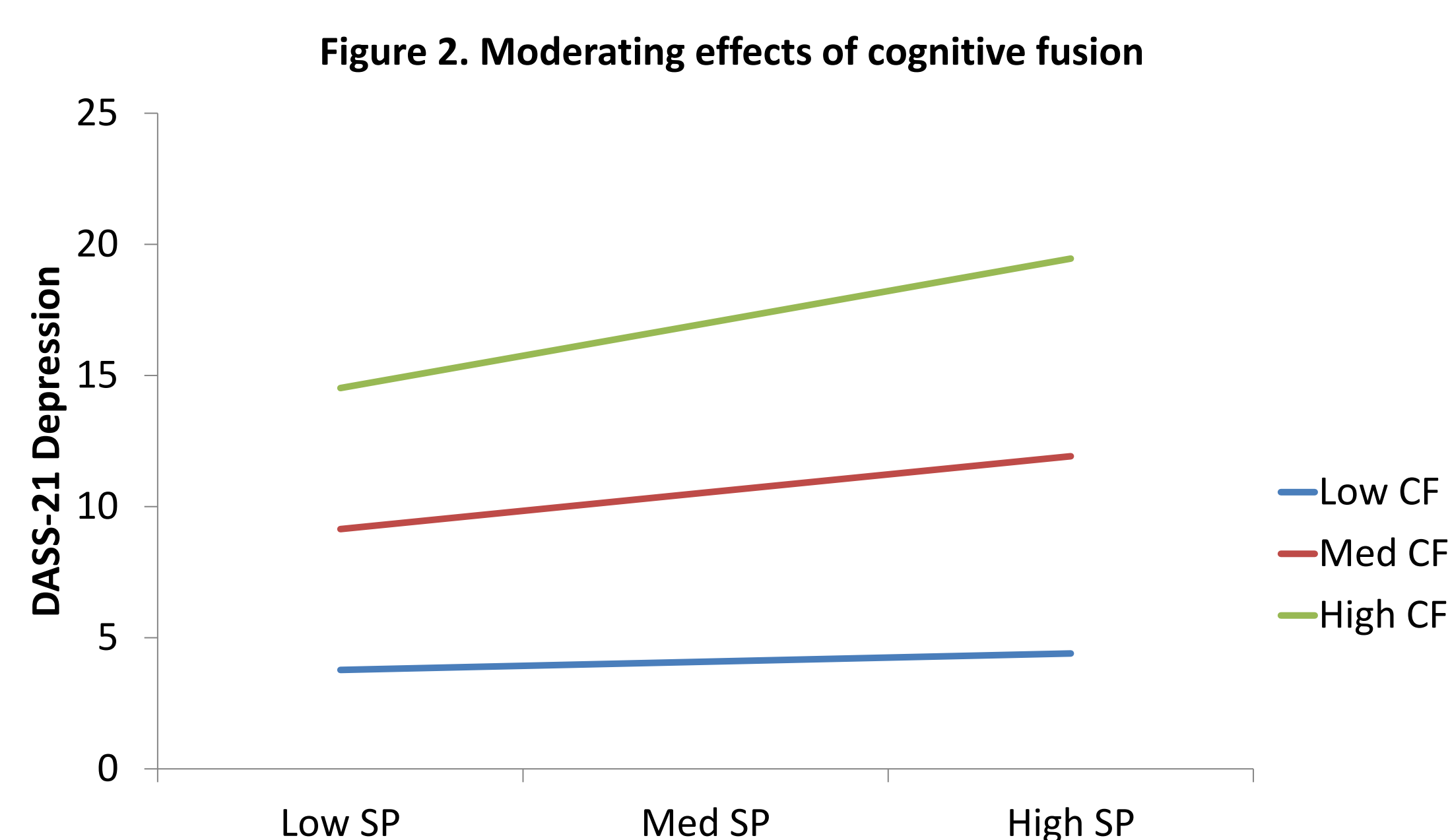
Table 1. Correlations, means, and standard deviations among constructs

Variables	1	2	3	4
1. Cognitive fusion				
2. Fears of being scrutinized	.59**			
3. Social interaction anxiety	.62**	.80**		
4. Depression	.71**	.53**	.53**	
Mean	24.04	22.25	19.28	11.16
SD	12.10	17.26	8.77	10.55

Note. **p < 0.01, two-tailed



Note. CF = Cognitive Fusion Questionnaire; SIA = Social Interaction Anxiety Scale; DASS-21 Depression = Depression Subscale of the Depression Anxiety Stress Scale - 21



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Zero-order Correlations

Cognitive fusion was moderately and positively correlated with social interaction anxiety, fears of being scrutinized, and depressive symptoms. See Table 1.

Moderation Analyses

We first examined whether cognitive fusion moderated the relationship between social interaction anxiety and depressive symptoms. The overall model predicted 52.78% of the variance in depressive symptoms scores. Cognitive fusion moderated the relationship between social interaction anxiety and depressive symptoms (unstandardized beta coefficient = .01, $p < .001$). Results from the Johnson-Neyman analysis are shown in Figure 1. For cognitive fusion scores between 16.55 and 49, the relationship between social interaction anxiety and depressive symptoms was significant, with the positive relationship between social interaction anxiety and depressive symptoms becoming stronger with increasing cognitive fusion. This interaction had a small effect size (Cohen, 1988) as the change in multiple R^2 value after adding the interaction term was .01.

Next, we examined whether cognitive fusion moderated the relationship between fears of being scrutinized and depressive symptoms. The overall model predicted 51.68% of the variance in depressive symptoms scores. Cognitive fusion moderated the relationship between fears of being scrutinized and depressive symptoms (unstandardized beta coefficient = .002, $p < .001$). Results from the Johnson-Neyman analysis are shown in Figure 2. For cognitive fusion scores between 19.60 and 49, the relationship between fears of being scrutinized and depressive symptoms was significant, with the positive relationship between fears of being scrutinized and depressive symptoms becoming stronger with increasing cognitive fusion. This interaction had a small effect size (Cohen, 1988) as the change in multiple R^2 value after adding the interaction term was .01.

DISCUSSION

Results from this study showed that cognitive fusion was positively and moderately correlated with social anxiety and depressive symptoms. These findings are consistent with previous research (Krafft, Haeger, & Levin, 2019). Furthermore, the current study found that cognitive fusion moderated the relationship between social anxiety and depressive symptoms, such that the relationship became stronger with increasing levels of cognitive fusion.

Regarding limitations, the current study used undergraduates from a single university. Future studies could include a sample consisting of undergraduates from various institutions across the country. Additionally, future studies would benefit from examining these constructs in clinical populations.

Results from the current study warrant investigation into the efficacy and effectiveness of interventions targeting cognitive fusion in populations that experience social anxiety and depressive symptoms.