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THE COGNITIVE CONTENT SPECIFICITY HYPOTHESIS IN ANXIETY AND DEPRESSION

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ABSTRACT

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Krystell Montalvo

In this study, we recruited 400 participants through an online platform and obtained measures of social anxiety symptoms, depressive symptoms, dysfunctional attitudes, and irrational thinking. We tested the cognitive content specificity hypothesis which predicts that anxious symptoms will be more highly correlated to irrational and dysfunctional beliefs with anxious cognitive content, and depressive symptoms would be more highly correlated with depressive cognitive content. The results were mixed, but generally showed that depressive cognitive content was more highly correlated to depressive symptoms, especially in the case of the positive association between irrational thoughts about self-depreciation and depressive symptoms.

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INTRODUCTION

Irrational thoughts are defined as unrealistic thoughts that can cause emotional distress, discomfort, and/or self-defeating behavior. People with irrational thoughts are prone to experiencing a wide array of emotional disturbances (Ellis, 1994). Irrational thoughts are expressed rigidly and hinder one's functioning in our daily activities, our goals, or our purposes. Irrational beliefs usually begin with phrases such as "should", "should be", or "I have to" and they have generated automatically and not consciously (Ellis, 1994). Besides, it has been shown that irrational thoughts are related to different psychological disorders, according to Bridges and Harnish (2010), irrational beliefs have been shown to play a primary role in numerous disorders, including depression and anxiety. Because of these beliefs, depressed and anxious persons systematically distort the meaning of events to interpret their experiences in a sustained, negative, self-defeating way, however, both disorders have characteristics that differentiate them.

For instance, depression, also known as Major Depressive Disorder, is a mood disorder characterized by persistent feelings of sadness and hopelessness, loss of interest in activities of interest, excessive guilt, and difficulty concentrating (APA, 2013: Feliciano & Renn, 2014). It is also characterized by physical symptoms such as weight loss and fatigue. Social anxiety on the other side is characterized by presenting intense anxiety or fear of being judged, negatively evaluated, or rejected in social situations, which generates avoidance of social situations (APA, 2013; Valentiner, Fergus, Behar, Conybeare, 2014). Like Depression, Social Anxiety also has physical symptoms such as rapid heart rate, nausea, and sweating, when the individual is faced with a feared social situation. Both disorders can wreak havoc on the lives of the people who suffer from

them, interfering with their daily life, their daily routine, school or work performance, social life, and family relationships (Feliciano & Renn, 2014; Valentiner et al. 2014).

Depression, Anxiety, and Irrational Beliefs

Both in depression and anxiety, irrational beliefs are associated with distinct patterns of negative cognitions. Depression is associated with irrational thoughts related to loss, failure, and worthlessness. Anxiety, on the other hand, is associated with irrational thoughts related to a threat, and the extreme discomfort of experiencing anxiety. According to the cognitive content specificity (CCS) hypothesis (Smith and Mumma 2008), each emotional disorder (i.e., depression versus anxiety) model should be associated with distinct cognitive profiles, depressive symptoms with cognitive themes involving personal loss, deprivation, or failure, anxiety with threat or vulnerability to harm cognitions.

The current study will focus on irrational thoughts as predictors of social anxiety and depression. Previous studies have shown significant correlations between social anxiety and depression and irrational thoughts and cognitive distortions. Davison and Zighelboim (1987) found that college students articulated more irrational thoughts when faced with a stressful social-evaluative situation than one that did not involve self-criticism. Results from Davison and Zighelboim (1987) also showed that students who tend to feel anxious in social situations expressed more irrational thoughts.

Chang and D'Zurilla (1996) conducted a study to investigate the discriminant validity of the five scales of irrational beliefs of the Survey of Personal Beliefs (SPB) in the evaluation of depression and anxiety in 284 undergraduate students. These five scales

consisted of: (1) Awfulizing, (2) Self-Directed Shoulds, (3) Other-Directed Shoulds, (4) Low Frustration Tolerance, and (5) Self-Worth. The results showed that the "Low Frustration Tolerance" scale was a unique predictor of both depression and anxiety. Likewise, the "Other-Directed Shoulds" and "Self-Worth" scales were also found to be unique predictors of anxiety symptoms.

Nieuwenhuijsen et al. (2010) conducted a study to investigate the levels of irrational beliefs among employees with adjustment disorder, depressive disorder, and anxiety disorder. A total of 190 employees with mental health problems participated in this study. The results showed that patients with anxiety and depression presented higher levels of irrational beliefs. Patients with depression alone were also found to have lower levels of irrational beliefs compared to those with anxiety disorders, but higher levels of irrational beliefs compared to patients with adjustment disorders.

Kërqeli, Kelpi, and Tsigilis (2013) conducted a study in order to examine two hypotheses: (1) whether the magnitude of dysfunctional attitudes is uniformly obtained after the mood induction procedure in subjects with and without depressive symptoms and (2) whether dysfunctional attitudes predicted future symptoms of depression. Results showed that there was no significant difference between groups based on depression symptoms. However, results also found that mood priming can hinder accessibility to dysfunctional attitudes.

Nyarko and Amissah (2014) conducted a study to explore the relationship between cognitive distortions and depression among undergraduate students as well as examine the influence of factors like race, age, and educational level on cognitive distortions and depression. Their results showed that there was a significant relationship

between cognitive distortions and depression. They also found that there was no significant relationship between age and level of depression, and age and level of cognitive distortions. It was also predicted that women will be more cognitively distorted and more depressed than men, however, results found that there was no gender difference in cognitive distortions and depression.

Blake et al. (2016) conducted a study to describe cognitive errors in 45 patients with depression and to examine the relationship between cognitive errors and the severity of depression. To carry out this study, the Cognitive Errors Rating Scale (CERS) was used to assess cognitive errors. It describes 15 cognitive errors, which were classified into 4 clusters: Fortune telling (Cluster A: CE 1), overgeneralization (Cluster B: CEs 2 and 3), selective abstraction (Cluster C: CEs 4 to 11), and personalizing (Cluster D: CEs 12 to 15) and subdivided into positive and negative valences. The results of this study showed that participants have more negative than positive cognitive errors, especially in those categorized as "high distorters" compared to "low distorters". This study also showed that the most prevalent cluster in the participants was selective abstraction.

Kuru et al. (2017) conducted a study to investigate cognitive distortions in Social Anxiety Disorder (SAD), one hundred two patients between the ages of 18 to 65 years old participated in this study. All participants received cognitive behavioral therapy (CBT) or pharmacotherapy for treatment. The study showed that patients with SAD were more likely to have more cognitive distortions than the healthy control group, the SAD scores were compared in terms of depression, and state and trait anxiety levels, all three scale scores were higher in the patient group than the healthy control group.

Cognitive Content Specificity Hypothesis

As we mentioned before, people with SAD or MDD tend to generate thoughts characteristic of each disorder, for example, people with SAD tend to have thoughts associated with a threat, and the extreme discomfort of experiencing anxiety, while people with MDD tend to have thoughts related to loss, failure, and worthlessness.

The cognitive content specificity hypothesis (CCSH) is a key component of cognitive theory; This establishes that emotional disorders can be defined by cognitive content and cognitive profiles (Baranoff & Oei, 2015). Dozois and Frewen (2005) conducted a study to examine the common and distinctive features of auto schematic structure in major depressive disorder and social anxiety compared with other anxiety disorders in general and with no psychiatric disorders. Results showed that negative interpersonal content is more interconnected in individuals with social phobia and depression compared with both other anxiety disorders and nonpsychiatric disorders. In addition, both social phobia and depression were associated with less interconnected positive content. Schniering and Rapee (2004) tested the hypothesis of the cognitive specificity of the content in 360 children and adolescents aged 7 to 16 years, two hundred children and adolescents from one public and two private schools (nonclinical community group), and 160 young people with anxiety disorders, depression, or disruptive behavior (clinical group). Through multivariate analyzes that controlled for the effects of all cognitive and symptom-related measures, they found that thoughts related to personal failure or loss were the strongest predictors of non-cognitive depressive symptoms. In addition, thoughts related to social threat or negative appraisal were strong predictors of

noncognitive anxiety symptoms. Results also showed that beliefs about hostility or revenge were the strongest predictors of externalizing symptoms, such as aggression.

Beck and Perkins (2001) conducted a series of thirteen studies to assess the empirical evidence for the cognitive content specificity hypothesis, of the 13 studies six involved nonclinical populations with 1572 participants, and the other seven were clinical studies with 2965 participants. The results showed that contrary to the cognitive content specificity hypotheses, measures of anxious and depressive cognitive content were found to be highly correlated to both anxiety and depression, depressed symptomatology was also found to share significantly more of its variance with depressed cognitive content than anxious cognitive content, while anxious cognitive content showed no significant trends toward specificity.

Smith and Mumma (2008) conducted a study to test the cognitive content specificity hypothesis in 189 psychology students using web-based questionnaires to assess distress and cognitions, which they had to complete over five weeks. To increase specificity, an expanded set of cognitive themes was tested for depression, anxiety, and anger. To achieve this great specificity, the items from the Defectiveness, Dependency, Failure, and Abandonment scales of the Young Schema Questionnaire (YSQ) were adapted to test the specificity of depression, and the Vulnerability to Harm scale was adapted to test the specificity of anxiety. Cognitions associated with anger were also assessed using a scale that assessed thoughts of transgression and violation of boundaries. The results showed that thoughts of transgression were more related to the anger mood, while feelings of Defectiveness, Hopelessness, and Abandonment were more related to depressed mood. In addition, the feeling of Failure was more strongly related to both

anxiety and depression than to anger. However, the results also found that the feeling of Dependence was not related to depression and the feeling of Vulnerability to Harm was not related to anxiety.

According to cognitive models, vulnerability to major depressive disorder (MDD) is due to a bias of blaming oneself for failures in an overly generalized way, this results in excessive emotions of self-blame, low self-esteem, hopelessness, and depression. Based on this, Zahn et al. (2015) conducted a study with 132 patients diagnosed with MDD with three objectives: (1) To test whether the feeling of inadequacy/worthlessness is a consistent symptom of Major Depressive Disorder (MDD) and whether it co-occurs with other core symptoms, (2) The type of self-blaming emotion experienced during depressive episodes differs between patients and is not limited to guilt, and (3) Negative emotions towards others are not as frequent and do not coexist with the core symptoms of depression. Results from this study showed that thoughts about inadequacy and hopelessness were part of the core syndrome of major depression. The results also found that self-blame is very common in the disorder, but self-disgust/hatred were slightly more frequent than guilt and were more closely related to core symptoms of depression.

Buschmann et al. (2017) conducted a study to investigate the relationship between irrational beliefs and components of automatic thoughts and their role in the etiology of depression and anxiety in 542 undergraduate students under stressful situations (in this case, exam times). Results from this study showed that participants who experienced more irrational thoughts also experienced higher levels of automatic thoughts which were related to higher depressive affect and increased anxious affect. Likewise, it was also found that irrational beliefs related to Demandingness affected not only secondary

irrational beliefs but also automatic thoughts, Self-downing irrational beliefs were more related to automatic depressive thoughts, and the Low-Frustration Tolerance had a large effect on both anxiety and depression.

The current study seeks to attempt to replicate previous findings that support the relationship between specific types of irrational and dysfunctional beliefs and depression and social anxiety. That is, this study will test the cognitive content specificity hypothesis. Replication studies are considered increasingly important in a rapidly expanding field such as psychology (Maxwell, Lau, & Howard, 2015). We predict that irrational and dysfunctional beliefs about threats (especially social threats, like loss of approval) will be more strongly correlated with symptoms of anxiety than depression, and irrational and dysfunctional beliefs about loss and failure and low self-worth will be more strongly correlated with depressive symptoms than anxiety.

Hypothesis

1. For social anxiety, we would expect to see a higher correlation between dysfunctional and irrational beliefs about social threats and symptoms of social anxiety, relative to the correlation between social threat and depression.

2. For depression, we would expect to see higher correlations between dysfunctional and irrational beliefs about failure and loss and symptoms of depression, relative to the correlation between loss/failure and anxiety.

3. Secondary analyses will examine gender differences concerning depression, anxiety, and dysfunctional and irrational beliefs.

Method

Participants

A total of 400 participants, 200 males, 200 females, participated in the study. All participants were English speakers with an age range between 17 to 68 years (M = 32.56). Participants were recruited through Amazon Mechanical Turk (Mturk).

Assessment Instruments

Psychiatric Diagnostic Screening Questionnaire (PDSQ): A self-report scale designed by Zimmerman and Mattia (2001) to screen for the most common DSM-IV axis I disorders encountered in outpatient mental health settings (Zimmerman and Mattia 2001). In this study, this scale was used to assess symptoms of depression and social anxiety in the participants. For both the social anxiety subscale and the depression subscale, participants were provided the following instruction: “For each question, check the box in the *Yes* column if it describes how you have been acting, feeling, or thinking. If the item does not apply to you, check the box in the *No* column”.

Social Phobia: This scale consists of eight questions; the sixth question contains eight sub-questions giving a total of fifteen questions. To answer this scale, participants were asked to describe what they thought, felt, or acted in general. The way of scoring this scale was that "Yes" was equal to 1 point while "No" was equal to zero so that the participants could obtain a score ranging from 0-15 points.

Depression: This scale originally consisted of 21 items but was modified to 13 items. To answer this scale, participants were asked to describe what they thought, felt, or

acted during the last two weeks. The answers answered with “Yes” were equivalent to 1 point while those that were answered with “No” were equivalent to 0 points so that the participants could obtain a score ranging from 0-13 points.

12 Item Attitudes and Beliefs Scale-II: A scale developed in the late 1980s to measure Elli’s rational and irrational beliefs. This scale contains items that assess irrationality and rationality. Originally the scale contained 76 items constructed by DiGiuseppe et al. (1988) and later abbreviated to 24 items by Hyland et al. (2014). Exclusion of the 12 “rational belief” items identified by Hyland et al. (2014) occurred to consolidate the length of the total survey. In this study, participants were asked to answer twelve questions from the ABS-II. They were told to select the answer that best describes their degree of agreement with each of the statements in the questionnaire. Participants rated each question on a five-point Likert scale ranging from zero (“Strongly Disagree”) to four (“Strongly Agree”). The twelve items were paired into groups of 3, the first three items formed the "Demandingness Scale", items 4-6 formed the "Awfulizing Scale", items 7-9 formed the "Low Tolerance Scale" and the last three items (10-12) made up the “Scale of Depreciation”. Total scores from the ABS subscales range from 0 to 12, The total scores from the ABS subscales were added together to create a “Total Irrationality” score. The maximum possible score was 48. In terms of reliability, the twelve items of the ABS-II had excellent reliability, Cronbach's $\alpha = .920$, as well as the Demandingness subscale, which presented high reliability, Cronbach's $\alpha = .901$, the Low-Frustration tolerance subscale, presented good reliability, Cronbach's $\alpha = .768$. The reliability tests of the Awfulizing subscale also showed high reliability, Cronbach's $\alpha = .838$, and the

Depreciation subscale also had high reliability, Cronbach's α = .826. ABS-II scores for twelve participants were dropped due to scoring errors.

Dysfunctional Attitude Scale-Short Form: This is a self-report scale, consisting of 40 items scale. Using item response theory (IRT) to select psychometrically strong items from the original 40-item Dysfunctional Attitude Scale (DAS; Weissman 1979), Beevers et al. (2007) developed two nine-item short-form versions of the DAS (DAS-SF1 and DAS-SF2). The DAS-SF1 and DAS-SF2 are highly correlated to each other (r = .89). The items on both short forms assess dysfunctional beliefs about the need for approval from others, imperatives for self-worth, perfectionism, and critical self-appraisal regarding goal attainment. Each DAS Short Form consists of 9 items rated on a 4-point self-report scale ranging from 1 (Totally Disagree) to 4 (Totally Agree). The total score ranges from 9 to 36, with higher scores indicating more dysfunctional attitudes. The DAS-SF1 was used in this study to reduce the burden on the participants. Items on the DAS-SF1 include statements such as "My value as a person depends greatly on what others think of me" and, "If I fail at my work, then I am a failure as a person." Both DAS short forms contain item content that overlaps with the constructs of Sociotropy (i.e., need for affiliation and approval) and Autonomy (i.e., the importance of goal attainment) (Bieling et al. 2000). For this study, participants were instructed to circle the number that best described how much each sentence described their attitude. In general, the responses of each participant should describe how they thought most of the time. Participants rated each question on a 4-point Likert scale ranging from 1 ("Totally Disagree") to 4 ("Totally Agree"), the maximum score that could be obtained was 36 points. If participants scored high, the

higher the chances that an individual had more dysfunctional attitudes. In this study, the reliability of the DAS-SF1 for this sample was very good ($\alpha = .910$).

Procedure

This study utilized data that was previously collected as part of another study approved by the University's IRB in 2018. The 400 MTurk participants were Amazon Marketplace workers recruited through Amazon Marketplace. In exchange for their participation, MTurk workers were provided with a small monetary reward. The SJU undergraduates were students in psychology classes and participated in the study in exchange for course credit. Participants were provided with written informed consent for their involvement in the study. After providing informed consent participants who agreed to be in the study were then asked to answer questions demographic questions and questions about psychological problems (anxiety and depression) and irrational beliefs, and some other questions (e.g., personality dysfunction, hostility) that were not the focus of this report. The survey was completed online at Qualtrics.com.

Psychiatric History and Demographics

Upon completion of the survey, participants were asked to provide their gender, age, years of education, relationship status, race, or ethnic group, whether or not they were born in the United States, and religious affiliation. They were also asked to tell if they had grown up in a bilingual or multi-lingual household, if they had been in psychotherapy or had taken pre-written medicine for help with a psychological problem, and if they would prefer to have a psychotherapist of the same race/ethnicity and religion.

These variables will be the focus of a separate report, and other than gender were not analyzed in this study.

Data Analytic Plan

In this study, we used Cronbach's Alpha to measure the reliability of the subscales of the Attitudes and Beliefs Scale as well as the total scores from both the ABS-II and the DASSF. Likewise, correlations between items from the ABS-II and the DASSF and depression and social anxiety were also performed, and the difference between correlations was analyzed according to the method described by Meng, Rosenthal, & Rubin (1992) for comparing correlated correlation coefficients.

A doctoral-level clinical psychologist with a strong background in cognitive therapy and rational-emotive behavior therapy rated item content of the ABS-II and DASSF1 as being either primarily anxious in nature (e.g., content about a feared outcome) or depressive in nature global ratings of low self-wroth. For the ABS-II items, we hypothesized that items 1 through 9 would be more highly correlated with anxiety than depression because of the content about apprehension about a feared outcome. We hypothesized that 10-12 would be more highly correlated with depression because of content about failure and global ratings of self-worth. For the DASSF1 items, we hypothesized that items 3, and items 7 through 9 would be more strongly correlated with anxiety because of content about a feared outcome. DASSF1 items 1 and 2, and 4 through 6 would be more strongly correlated with depressive symptoms because of content about failure and global ratings of low self-worth.

Results

Descriptive Statistics

Gender: Among the participants in this study, there was a slight difference between the number of men (n=200, 50.12%) and the number of women (n=199, 49.87%). Table 1 shows the means and standard deviation of study measures for the total sample and by gender

Table 1

Means and standard deviation of study measures for the total sample and by gender

Measure	Male (n= 200)	Female (n=199)	Total (n= 399)
ABS	M= 24.45 SD= 10.45	M= 22.33 SD= 11.68	M= 23.40 SD= 7.44
DASSF	M= 21.78 SD=6.59	M= 19.69 SD= 6.86	M= 20.75 SD= 8.13
Depression	M=4.93 SD=4.37	M= 4.54 SD= 4.25	M= 4.74 SD= 0.3
Social Anxiety	M=7.04 SD=5.07	M= 7.15 SD= 5.01	M= 7.10 SD= 1.19

Note: ABS= Attitudes and Beliefs Scale, DASSF= Dysfunctional Attitudes Scale-Short Form

Attitudes and Beliefs Scale (ABS)

All items from the ABS scale were positive correlated to both social anxiety and depression, except item 3 which was significantly correlated with depression and not significantly corelated with social anxiety, contrary to our prediction. Of the eight items rated as having anxious content, five had higher correlations with anxiety but none of those correlations were significantly greater than the corresponding correlation to depression. In the case of the four items (8, 10,11, 12) rated as having depressive content, all four were more highly correlated to depression than anxiety, as hypothesized. However, only item 11 ("If I do not perform well at tasks that are very important to me, it is because I am a worthless bad") had a significantly higher correlation to depression than social anxiety. And there was a trend toward item 12 ("When people reject me…") showed a trend toward being more highly correlated with depression than anxiety ($p < .06$).

Table 2

Correlations between ABS items, depression and social anxiety, and differences between correlations.

ABS Items	Social Phobia correlations	Depression correlations	Z-Score	2-tail p
1. I must do well at important things, and I will not accept it if I do not do well	.140	.126	0.318	0.75
2. It's essential to do well at important jobs; so I must do well at these things.	.086	.114	-0.632	0.53

3. I must be successful at things that I believe are important, and I will not accept anything less than success.	.143	.178	-0.798	0.42
4. It's awful to be disliked by people who are important to me, and it is a catastrophe if they don't like me.	.396	.348	1.18	0.24
5. Sometimes I think the hassles and frustrations of everyday life are awful and the worst part of my life.	.376	.434	-1.454	0.15
6. If loved ones or friends reject me, it is not only bad, but the worst possible thing that could happen to me.	.364	.336	0.68	0.50
7.It's unbearable being uncomfortable, tense or nervous and I can't stand it when I am.	.473	.436	0.958	0.34
8. It's unbearable to fail at important things, and I can't stand not succeeding at them.	.342	.366	-0.584	0.56
9. I can't stand being tense or nervous and I think tension is unbearable.	.418	.375	1.072	0.28
10.If important people dislike me, it is because I am an unlikable bad person.	.418	.464	-1.18	0.24
11. If I do not perform well at tasks That are very important to me, it Is because I am a worthless bad person.	.446	.523	-2.043	0.041
12.When people I like reject me or dislike me, it is because I am a bad or worthless	.399	.473	-1.893	0.060

Note: ABS = Attitudes and Beliefs Scale; N = 399. Items in bold (8, 10, 11, 12) were rated as having predominantly depressive cognitive content. All other items were rated as having primarily anxious cognitive content.

Dysfunctional Attitudes Scale-Short Form

On the DASSF, seven out of nine items were more correlated to depression than social anxiety. Four of five items rated as having depressive content were more highly correlated to depression than anxiety. Only one out of four items rated as having anxious content were more highly correlated with anxiety than depression. None of the correlations were significantly higher for depression or anxiety.

Table 3

Correlations between DASSF items, depression and social anxiety, and the difference between correlations

DASSF ITEMS QUESTIONS	SOCIAL PHOBIA CORRELATIONS	DEPRESSION CORRELATIONS	Z-SCORE	2-TAIL P
1.If I don't set the highest standards for myself, I am likely to end up a second-rate person.	.304	.317	-0.31	0.76
2.My value as a person depends greatly on what others think of me.	.438	.430	0.204	0.84
3.People will probably think less of me if I make a mistake.	.452	.440	0.309	0.76
4.I am nothing if a person I love doesn't love me.	.398	.447	1.18	0.24
5.If other people know what you are really like, they will think less of you.	.455	.479	-0.627	0.53
6.If I fail at my work, then I am a failure as a person.	.415	.456	-1.047	0.30
7.My happiness depends more on other people than it does on me.	.413	.439	-0.66	0.51

8.I cannot be happy unless most people I know admire me.	.395	.428	-0.83	0.41
9.It is best to give up your own interests in order to please other people.	.348	.368	-0.488	0.63

Note: DASSF = Dysfunctional Attitudes Scale-Short Form; All correlations were statistically significant at the $P < .001$ level.

Discussion

The findings of the current study were mixed and generally showed stronger support for the association between depressive cognitive content and depressive symptoms than the association between anxious content and anxious symptoms. All the items from the ABS and DASSF scales used in this study were positively correlated to social anxiety and depression (except item 2 and social anxiety). Only one comparison of correlations revealed a significant difference. Specifically, item 11 of the ABS-II, which contains content about self-depreciation, was significantly more highly correlated to depression than anxiety, as hypothesized. There was a general trend for stronger support for the content specificity hypothesis in the case of depression than in the case of social anxiety.

Our results are generally consistent with those of Davison & Zighelboim (1987) who found that when faced with situations in which stressful social evaluation could be experienced, university students generated more irrational thoughts which shows that more social anxiety is experienced in these situations, the more irrational thoughts are generated. However, our results differed from those obtained by Chang and D'Zurilla (1996) who found that the "Low Frustration Tolerance" scale was the only predictor of both anxiety and depression while "Other-Directed Shoulds" and "Self-Worth" were the only predictors of anxiety (which it should be noted is not consistent with the cognitive content hypothesis). In our study, ABS-II items 11 (which contains content reflecting Self-Depreciation) presented a significantly higher correlation to depression, which is consistent with the content specificity hypothesis. These results are similar to those found by Nyarko and Amissah (2014), where, using a sample of undergraduate students, it was

found that there was a significant correlation between cognitive distortions and depression.

In terms of social anxiety, Kuru et al. (2017) found that patients with Social Anxiety Disorder were more likely to have more cognitive distortions. In our studies, positive correlations were found between irrational beliefs and social anxiety and depression, but we did not find strong support for the content specificity hypothesis with respect to anxious content and anxiety symptoms. In part, this resembles the results of Nieuwenhuijsen et al. (2010) who found that patients with anxiety and depression presented higher levels of irrational beliefs. However, the part of their study that differs from the results of our study is that they also found that patients with only depression had lower levels of irrational beliefs compared to those patients with anxiety disorders. Blake et al. (2016), who studied cognitive errors among patients with depression, found that those who were considered "high distorters" also tended to have more negative cognitive errors, it also showed that the most prevalent cluster in the participants was selective abstraction, these results were not surprising considering that people with MDD tend to have a more pessimistic and negative perception of themselves. This differs from our study in that the content that was significantly correlated to depression was related to "Self-Depreciation". Our results also differ from those made by Kërqeli et al. (2013) who found that mood priming can hinder accessibility to dysfunctional attitudes.

Results from our study also showed that males scored higher in irrationality compared to women. These results differ from the studies conducted by Samar et al. (2013) and McDermut (2019) who found that women scored higher in irrationality compared to males. However, our results are similar to those obtained by Vasile (2012)

who found that males have higher unconditioned self-acceptance than women even though the men's irrationality is higher than in the women's sample. This might be due to the nature of the sample. Our finding that men scored higher on average than women on depression is very atypical and contrary to what is typically found in gender studies of depressive symptoms (Costa, Terracciano, & McCrae, 2001; Weisberg, DeYoung, & Hirsh, 2011). We are not sure how to interpret this surprising finding. It may be sample dependent.

In this study, we predicted that irrational beliefs about social threats will be more strongly correlated with symptoms of anxiety than depression, and irrational beliefs about loss and failure will be more strongly correlated with depressive symptoms than anxiety. Our results did not show strong support for an association between anxious content and anxiety symptoms. This issue is discussed further below. There was generally more and stronger support for an association between depressive content and depressive symptoms.

Our pattern was similar to those obtained by Schniering and Rapee (2004) who found that thoughts related to personal failure or loss were the strongest predictors of non-cognitive depressive symptoms, and thoughts related to social threat or negative appraisal were strong predictors of non-cognitive anxiety. symptoms. Our results are also similar to those obtained by Smith and Mumma (2008) who conducted a study to test the cognitive content specificity hypothesis and found that thoughts of Defectiveness, Hopelessness, and Abandonment were more related to depressed mood.

Our results are also similar to those found by Dozois and Frewen (2005) who found that negative interpersonal content is more interconnected in individuals with social phobia and depression compared with both other anxiety disorders and

nonpsychiatric disorders. This is because people who suffer from this type of disorder usually have negative thoughts or perceptions of the situations in interactional situations. For example, people with anxiety tend to have pessimistic thoughts if they are faced with a social situation in which they feel that may be judged, while depression may present with a feeling of not being "good enough" to belong in a group.

Zahn et al. (2015) found not only that thoughts of inadequacy and hopelessness were part of the core syndrome of major depression, but also that self-blame was also very common in depression, and that self-disgust/hatred were more closely related to core symptoms of depression, these results did not surprise us since people with MDD usually have feelings of hopelessness or the feeling of not "not fitting in with any group, whether family or friends", likewise it is also known that people with MDD tend to have negative perceptions of themselves.

Buschman et al. (2017) found that irrational beliefs maintained a significant effect on depression, although automatic depressive thoughts mediated the effect. Irrational thoughts related to Self-downing were also found to be more closely related to depressive thoughts, and Low-Frustration Tolerance had a large effect on both anxiety and depression. In our study, all items of both the ABS and the DASSF scale were found to be positively correlated with both social anxiety and depression, but one item within the “Self-Depreciation” subscale was found to have a high correlation. with depression. However, we were surprised that the results found by Buschmann et al. (2017) showed that "Low Frustration Tolerance" was related to both anxiety and depression since most people who suffer from anxiety disorder are the ones who tend to have less tolerance for situations where they experience frustration but also experience fear of losing approval.

Our results are also similar to those obtained by Beck and Perkins (2001) who, like us, found that measures of anxious and depressive cognitive content were found to be highly correlated to both anxiety and depression. But they also found that depressed symptomatology shared significantly more of its variance with depressed cognitive content than anxious cognitive content, and anxious cognitive content showed no significant trends toward specificity. In our study, all the items on the scales used had a positive correlation with social anxiety and depression. Likewise, it was also found that people with depression tend to have thoughts about loss or failure, while people with social anxiety, in our study, did not show a consistent pattern of strong associations between content rated as anxious and anxiety symptoms.

This current study was not without limitations. We used a convenience sample of Mechanical Turk participants. As such, the findings cannot necessarily be generalized to the population of all adults. Some of our findings may be sample dependent. Also, relying on self-report measurement symptoms and irrational beliefs can be biased depending on the individual. According to Funder (1991) self-report might be problematic because of failure of accurate recall, insight, or impression management. Finally, this is a cross-sectional, correlational study and while we can detect associations between variables, we cannot determine the direction of causality. Another problem was that reliability of ratings of cognitive content was not obtained. The rater for this study noted that depressive cognitive content was more salient and easier to rate than anxious content. Consequently, items rated as having anxious content may be a blend of anxious content with other types of content such as depressive content.

Future research should recruit randomly sampled participants, to enhance generalizability. Future research should also collect symptom data based on clinician ratings to bypass some of the problems associated with self-report measures. To determine the direction of causality (i.e., do irrational cognitions cause emotional distress), a prospective longitudinal study may be more appropriate. Future studies like this one should attempt to determine reliability of the ratings of anxious and depressive cognitive content for measures of dysfunctional attitudes and irrational beliefs.

However, despite these limitations, we do feel that our results partially replicated for the most part previous findings especially for the association between depressive content and depressive symptoms. The clinical implication is that, at least in our study, cognitive treatments for depression would do well to continues to identify and modify cognitions with depression content as part of an overall treatment package for depressive disorder.

Appendix

Questionnaires

PDSQ Social Phobia

1. Do you worry a lot about embarrassing yourself in front of others?

2. Do you worry a lot that you might do something to make people think that you are stupid or foolish?

3. Do you feel very nervous in situations where people might pay attention to you?

4. Are you extremely nervous in social situations?

5. Do you regularly avoid any situation because you are afraid you'd do or say something to embarrass yourself?

6. Do you worry a lot about doing or saying something to embarrass yourself in any of the following questions?

6a. …public speaking?

6b. …eating in front of others?

6c. …using public restrooms?

6d. …writing in front of others?

6e. …saying something stupid when you are in a group of people?

6f. …asking a question when in a group of people?

6g. …work meetings?

6h. …parties or other social gatherings?

7. Do you almost always get very anxious as soon as you are in any of the above situations?

8. Do you avoid any of the above situations because they make you feel anxious or fearful?

PDSQ Depression

1. Did you feel sad or depressed for most of the day, nearly every day?

2. Did you get less joy or pleasure from almost all the things you normally enjoy?

3. Were you less interested in almost all of the activities you are usually interested in?

4. Was your appetite significantly smaller (or greater) than usual nearly every day?

5. Did you sleep at least 1 to 2 hours less than usual (or more than usual) nearly every day?

6. Did you feel very jumpy and physically restless, and have a lot of trouble sitting calmly in a chair, nearly every day?

7. Did you feel tired out nearly every day?

8. Did you frequently feel guilty about things you have done?

9. Did you put yourself down and have negative thoughts about yourself nearly every day?

10. Did you feel like a failure nearly every day?

11. Did you have problems concentrating nearly every day?

12. Was decision-making more difficult than usual nearly every day?

13. Did you wish you were dead, think you'd be better off dead, or have thoughts of suicide?

12 Item Attitudes and Beliefs Scale-II

1. I must do well at important things, and I will not accept it if I do not do well.

2. It's essential to do well at important jobs; so I must do well at these things.

3. I must be successful at things that I believe are important, and I will not accept anything less than success.

4. It's awful to be disliked by people who are important to me, and it is a catastrophe if they don't like me.

5. Sometimes I think the hassles and frustrations of everyday life are awful and the worst part of my life.

6. If loved ones or friends reject me, it is not only bad, but the worst possible thing that could happen to me.

7. It's unbearable being uncomfortable, tense, or nervous and I can't stand it when I am.

8. It's unbearable to fail at important things, and I can't stand not succeeding at them.

9. I can't stand being tense or nervous and I think tension is unbearable.

10. If important people dislike me, it is because I am an unlikable bad person.

11. If I do not perform well at tasks that are very important to me, it is because I am a worthless bad person.

12. When people I like reject me or dislike me, it is because I am a bad or worthless person.

Dysfunctional Attitudes Scale-Short Form (DAS-SF1)

1. If I don't set the highest standards for myself, I am likely to end up a second-rate person.
2. My value as a person depends greatly on what others think of me.
3. People will probably think less of me if I make a mistake
4. I am nothing if a person I love doesn't love me.
5. If other people know what you are really like, they will think less of you.
6. If I fail at my work, then I am a failure as a person.
7. My happiness depends more on other people than it does on me.
8. I cannot be happy unless most people I know admire me.
9. It is best to give up your own interests in order to please other people

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