8-2012

Perceived Anxiety Control and The Contribution of Gender in Social Anxiety Symptoms Within Latinos

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PERCEIVED ANXIETY CONTROL AND THE CONTRIBUTION OF GENDER IN SOCIAL ANXIETY SYMPTOMS WITHIN LATINOS

A Thesis

by

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Submitted to the Graduate School of the
University of Texas - Pan American
In partial fulfillment of the requirements for the degree of

MASTER OF ARTS

August 2012

Major Subject: Clinical Psychology

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August 2012

ABSTRACT

Villarreal, Delia Y., Perceived Anxiety Control and the Contribution of Gender in Social Anxiety Symptoms within Latinos. Master of Arts (MA), August, 2012, 27 pp., 3 tables, 46 references.

This study examined the severity of social anxiety symptoms and levels of perceived anxiety control in a Latino sample. It explored how perceived control, over anxiety-provoking events and reactions to those events, contributed to social anxiety symptoms of social interaction fears and performance fears. Potential gender effects were also examined.

Gender differences for fear of performance and for levels of perceived anxiety control were found. However, no gender difference was found for social interaction fears. In general, men reported higher levels of perceived anxiety control than women. Low perceived anxiety control significantly correlated with higher social interaction fears and performance fears of social anxiety disorder. The relationship between perceived anxiety control and social anxiety disorder symptoms was not moderated by gender, suggesting that the role of perceived control in social anxiety may be gender invariant in Latinos.

DEDICATION

To Arthur Linskey, Ph.D., *in memoriam*

ACKNOWLEDGEMENTS

I respectfully acknowledge Dr. Michiyo Hirai, Dr. Gary Montgomery, and Dr. Jason Popan for affording their time and advice to me. Thank you to all whom directly or indirectly donated their time for this project. I also acknowledge my family for the years of unconditional support.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

CHAPTER I

INTRODUCTION

The Problem and Purpose

Social anxiety disorder is a psychiatric condition characterized by an extreme and irrational fear of scrutiny or evaluation during social interaction and performance in social settings (American Psychiatric Association, 2000, *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. text revision). Individuals with social anxiety disorder experience physiological symptoms of anxiety (e.g., blushing, sweating, and tremors) sometimes so severe to elicit a panic attack or panic-like states.

Barlow, Raffa, and Cohen (2002) have suggested that social phobics recognize their fears as excessive or unreasonable and often perceive they have no control over their own symptoms or over the situations that provoke their anxiety, resulting in additional anxiety for the social phobic (e.g., heightened autonomic arousal, panic attack). Rapee (1997) reported that perceived anxiety control of the social phobic was a significant predictor of fear in response to social and performance situations. Perceptions of control over anxiety symptoms and over events related to anxiety symptoms appear to be important in the etiology of social anxiety disorder.

Minorities have been inadequately represented in empirical research investigating social anxiety disorder (Brown, White, Forsyth, & Barlow, 2004; Hofmann, 2005; Lang & McNeil, 2006). Further, the role of perceived anxiety control in social phobics has been studied in primarily Caucasian participants and minority groups remain underrepresented, specifically

Latinos (Gould & Edelstein, 2010; Hofmann, 2004; Zebb & Moore, 2003; Zvolensky et al., 2001). Thus, it is not clear whether the findings for perceived anxiety control in social anxiety disorder generalize to individuals of other cultural backgrounds. Latinos are the largest growing sociopolitical census grouping (U.S. Census Bureau, 2010) and it is important to determine any mental health disorder specificity within this rapidly growing population.

This study therefore examined the severity of social anxiety symptoms and levels of perceived anxiety control in a Latino college sample and explored whether perceived anxiety control is associated with social anxiety symptoms in Latinos. Given the inconsistencies in documented gender differences in symptoms of social anxiety disorder and perceived anxiety control, gender was investigated as affecting the relationship between perceived anxiety control and social anxiety symptoms.

CHAPTER II

REVIEW OF LITERATURE

Social Anxiety Disorder

Social anxiety disorder is a psychiatric condition characterized by a pervasive fear of scrutiny or evaluation during general or specific situations involving social interaction and/or social performance. Social phobics have excessive and irrational concerns about being embarrassed in front of other people. The social phobic fears that others will judge them as being "anxious, weak, crazy, or stupid" (DSM-IV-TR, pp. 450).

When the social phobic experiences fear to most and almost all social and performance situations, the disorder may be sub-specified as *generalized* (not to be confused with *generalized anxiety disorder*); whereas, a *non-generalized* sub-specifier is given to those who fear a single, or very few, social or performance situations with intense severity (e.g., fearing only public speaking or only eating in public). After exposure or during anxious anticipation of social situations, social phobics experience physiological symptoms of anxiety, such as blushing, sweating, and tremors. Socially anxious individuals may avoid activities such as public speaking, eating, drinking, and writing in dyad or social settings because they believe others will notice their symptoms (e.g., shaking voice, trembling hands), becoming fearful of embarrassment. Some social phobics are able to endure certain activities and situations under intense anxiety without resorting to avoidance, but it is the norm for socially anxious people to engage in avoidant behaviors in response to social activity (Rapee, 1997; Barlow et al., 2002).

Socially anxious people may recognize their fears as excessive or unreasonable and make efforts to control their symptoms and their immediate situation but they often perceive that they have no control over their anxious responding or over the situation in which they are in, causing them additional anxiety. Such uncontrollable anxiety often escalates into physiological symptoms, including autonomic arousal and panic. Most of the time, behavioral avoidance of future social activity arises due to the perceptions of uncontrollability and dyscontrol of social phobics (Barlow et al., 2002).

Social anxiety disorder is documented to be the second most prevalent psychiatric condition, with rates ranging from 3% to 13% (DSM-IV-TR; Kessler, Chiu, Demler, & Walters, 2005). Social anxiety disorder is a persistent public health concern related to various negative outcomes. Very few social phobics (37-38%) fully recover from social anxiety disorder (Chartier, Hazen, & Stein, 1998) regardless of demographic differences, such as socioeconomic status and gender (Stein, McQuaid, Laffaye, & McCahill, 1999). Keller (2003) reported that social phobics demonstrate to have higher impairment in social and occupational functioning than those with other severely debilitating psychiatric disorders, like depression. He also found that that 20% of socially anxious individuals from the Harvard-Brown Anxiety Project (HARP, 1981-2001) had attempted suicide. He described social phobia as "representing meaningful psychopathology with considerable social and economic burden" (Keller, 2003, p. 88).

Keller (2006) conducted a treatment study of adults with social anxiety disorder and found that the negative effects of the disorder on psychosocial functioning far surpassed the negative effects of depressive symptoms or medical illnesses. This delineates the importance of addressing concerns or ambiguities related to social anxiety disorder. Moreover, the functional impairment experienced by social phobics is comparable to the impairment of persons diagnosed

with the major psychiatric disorders, such as depression and generalized anxiety disorder (Breslau, Kendler, Gaxiola-Aguilar, & Kessler, 2005; Keller, 2003, 2006; Kessler, Stang, Wittchen, Stein, & Walters, 1999; Kessler et al., 2005) yet, studies have demonstrated that socially anxious individuals were less likely to seek treatment for the disorder (Keller, 2006). In an analysis of the US National Comorbidity Survey (US-NCS) data, Kessler et al., (2005) found that only 12.7% of individuals with social anxiety disorder ever sought treatment of any kind.

Social Anxiety Disorder: Gender Differences

Social anxiety disorder has been found to be equally distributed among the genders, with men slightly outweighing women in some studies (e.g., Rapee, Sanderson, & Barlow, 1988; Solyom, Ledwidge, & Solyom, 1986). In an analysis of data from the Collaborative Psychiatric Epidemiology Studies (CPES), McLean, Asnaani, Litz, and Hofmann (2011) investigated how gender affected the age of onset, chronicity, comorbidity, and burden of illness in social anxiety disorder. The authors examined gender differences in DSM-IV diagnoses and found social anxiety disorder was the only anxiety disorder that did not show significant gender differences in lifetime prevalence rates for the disorder. By contrast, some epidemiological and community studies show that females meet criteria for social anxiety disorder more than males, at around 2:1 (e.g., Kessler et al., 1994; Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992; Wittchen, Stein, & Kessler, 1999).

Turk et al. (1998) found significant differences between men and women in the severity of fear experienced by each gender in several specific social situations. Women reported more fear for performing, giving a talk in front of an audience, entering a room when others are already seated, being the center of attention, and giving a party. Men reported significantly more

fear than women only for urinating in a public bathroom. The gender differences found in this study were attributed to traditional sex-role expectations (Turk et al., 1998). Women have also been found to experience more severe physiological responses to anxiety-provoking situations (Grossman, Wilhelm, Kawachi, & Sparrow, 2001). Interestingly, men have been reported more likely than women to seek treatment for social phobia (Yonkers, Bruce, Dyck, & Keller, 2003). At the same time, men tended to underreport symptoms of social phobia when compared to women (Lovibond & Rapee, 1993).

Concerning cultural differences in social anxiety disorder, some evidence suggests that minority populations and specifically Latinos may be at higher risk for developing psychiatric disorders, including social phobia (e.g., Breslau et al., 2005). For example, Hispanics have been found to have the highest prevalence of mood (13.4%), anxiety (21.4%), and any disorder (31.6%) and highest persistence of mood, anxiety, and any disorder for 12-month prevalence (Breslau et al., 2005). Yet studies of social anxiety disorder with adequate representation by minorities, including Latinos, are meager.

Perceived Anxiety Control

Anxiety disorders including social phobia have been suggested to be maintained by various negatively biased cognitive processes (e.g., Kimbrel, 2008; Rapee & Heimberg, 1997, Taylor & Wald, 2003). An important cognitive bias implicated in social phobia is the belief held by the social phobic that she has no control over the environment or over the internal response to anxiety-provoking events (Rapee, Craske, Brown, & Barlow, 1996). Cognitive-behavioral models emphasize that socially anxious individuals maintain their condition by focusing their attentional resources on internal cues signaling an anxiety response (Clark & Wells, 1995) or to

both internal and external cues for their anxiety response (Rapee & Heimberg, 1997). Such cognitive processes are responsible for the development and maintenance of social anxiety disorder (Clark & Wells, 1995; Leary, 2001; Rapee & Heimberg, 1997).

Barlow et al. (2002) proposed a psycho-social diathesis model of anxiety where individuals with social anxiety disorder are said to experience "unexpected bursts of emotions" that may cause them to view their own emotions and bodily reactions as out of control in anxiety-provoking situations. Barlow et al. (2002) suggested that the belief of having little or no control over anxiety-provoking events or their reactions to such events facilitates anxiety symptoms. The belief that they cannot control their own anxiety leads the social phobic to opt for an avoidance reaction, helping only to maintain social anxiety.

Rapee et al. (1996) developed the Anxiety Control Questionnaire (AxCQ) as a measure for use specifically with the anxiety disorders (e.g., social phobia), contrasting global control measures; such as the Internal-External Locus of Control measure (Rotter, 1966). The AxCQ is designed to measure a specific perceived control over anxiety-related symptoms, reactions, external problems and threats (e.g., the reactions of other people, control over own mental or physical reactions, natural disasters). Higher scores on the AxCQ indicate greater perceived control over internal and external contributors to anxiety formation.

Ample empirical evidence exists supporting the notion that perceived anxiety control plays an important role in social anxiety disorder. It has been shown that social phobics are prone to perceive that they lack control over their internal response to anxiety-provoking events (Leung & Heimberg, 1996) and that they have minimal or no control over their situation (Cloitre, Heimberg, Liebowitz, & Gitow, 1992). Rapee et al. (1996) found that the degree of perceived anxiety control predicted fear in response to social situations. Similarly, Hofmann (2005) found

that perceived anxiety control significantly strengthened the relationship between catastrophizing tendencies and subsequent formation of social anxiety disorder symptoms.

Although the above studies seem to provide evidence for the role of perceived anxiety control in social anxiety disorder, it is unknown if the relationship applies to people of different cultural backgrounds. Previous studies on perceived anxiety control have been performed with primarily Caucasian samples and negligible representation from minority groups (e.g., Latinos).

Perceived Anxiety Control: Gender Differences

There have been limited and inconsistent findings regarding gender differences in perceived anxiety control. Rapee et al. (1996) found no significant gender differences in levels of perceived anxiety control in a predominantly Caucasian sample utilized to develop the AxCQ. Along the same lines, Brown et al. (2004) found that factor loadings, factor variances, covariances, latent means, and scale reliabilities did not vary by gender for the AxCQ (Rapee et al., 1996), suggesting gender invariance of the anxiety control construct. Likewise, Zebb and Moore (1999) reported no gender differences for the AxCQ mean scores or for the factor structure for the AxCQ total and subscales separately in their analysis of the measure.

In contrasting studies, including a recent study on perceived anxiety control with an adult sample (Gould & Edelstein, 2010), gender differences in the cognitive component assessed by the AxCQ were reported. Specifically, Gould and Edelstein (2010) documented significant effects of gender on anxiety control perceptions, with women reporting significantly lower control over their anxiety than men. Further, females reported lower perceived control over both interpersonal relationships and over uncontrollable events than males (Sherman, Higgs, & Williams, 1997). In addition, contrary to the conclusions of their previous study (Zebb & Moore,

1999), Zebb and Moore (2003) reported that males scored significantly higher on the AxCQ, indicating that women perceived less control over their anxiety than males. Zebb and Moore's (2003) analyses focused on superstitious behavior and perceived anxiety control and how they accounted for higher psychological distress reported. Their results revealed that females endorsed significantly lower anxiety control and a higher degree of superstitiousness, while males did not demonstrate such a significant relationship in a predominantly Caucasian sample.

The above inconsistent results make it difficult to conclude whether gender plays a role in levels of perceived anxiety control. Further, such relationships have never been investigated among individuals with diverse cultural backgrounds.

Overall, there is a shortage of studies investigating social anxiety disorder symptoms, the role of perceived anxiety control in social anxiety disorder, and any potential role that gender may play in these relationships, explicitly conducted within non-Caucasian, culturally diverse samples. Therefore, the current investigation attempted to address the above variables in a Latino sample.

Hypotheses

Based on the above literature, the current study examined the following hypotheses. It was hypothesized that Latino females would report significantly higher scores for social interaction fears (Hypothesis 1) and higher scores for the social performance fears (Hypothesis 2). These hypotheses were consistent with Turk's study (1998) and the study of Grossman et al., (2001). It was hypothesized that females would experience lower anxiety control perceptions than males (Hypothesis 3). This hypothesis was developed based on previous findings by Gould and Edelstein (2010) and Zebb and Moore (2003).

It was also hypothesized that social interaction fears and social performance fears would be positively correlated to each other (Hypothesis 4), given the characteristics of these social anxiety measures. Moreover, it was hypothesized that there would be a significant negative correlation between anxiety control perceptions and social interaction fears (Hypothesis 5) and between anxiety control perceptions and social performance fears (Hypothesis 6). These hypotheses were parallel to the former theoretical and empirical literature (e.g., Barlow et al., 2002; Hofmann, 2005; Rapee et al., 1996).

It was hypothesized that gender would moderate the relationship between anxiety control perceptions and social interaction fears (Hypothesis 7) and the relationship between anxiety control perceptions and social performance fears (Hypothesis 8). Specifically, it was hypothesized that females would show stronger associations than males in the relationships. Gender effects were explored in this study, as Zebb and Moore (2003), Gould & Edelstein (2010) and Sherman et al. (1997) have documented gender differences in perceived anxiety control among predominantly Caucasian samples.

CHAPTER III

METHODOLOGY AND RESULTS

Method

Participants.

Participants were 463 (120 men and 343 women) undergraduate students from a public university in South Texas. All participants endorsed Hispanic/Latino descent. Of the participants, 82% of males and 78% of females reported that they were single. The majority of males (63.6%) and females (66.2%) were in their junior and senior year of college. The participant age range for males was 18 – 48 years (M = 23 years, SD = 4.88) and 18 – 57 years for females (M = 23 years, SD = 4.86). A t-test for age between men and women was conducted, pointing to no significant age differences, M = 23 years, SD = 4.88, t (461) = .378, p = .71. No significant associations were found between gender and marital status χ^2 (3) = 1.408, p = .70, or between gender and education level χ^2 (12) = 11.77, p = .46.

Assessment instruments.

The *demographic information questionnaire* obtained participant gender, age, ethnicity, year of education, and marital status.

The *Anxiety Control Questionnaire* (AxCQ; Rapee et al., 1996) measures the extent to which a person perceives control over their own emotional reactions and over external threats that produce their anxiety. The participant rates a number of beliefs on a scale from 0 (strongly disagree) to 5 (strongly agree). The AxCQ has 30 items that are separated into two subscales: the

reactions subscale and the events subscale. Higher scores on the AxCQ indicate that the participant endorsed higher perceptions of control over the situations that produce their anxiety and over the reactions experienced in response to such anxiety-provoking events. Cronbach's alpha for the total has been reported to be at .89 (Rapee et al., 1996). Rapee (1996) also reported good test-retest reliability and internal consistency for the AxCQ, as well as convergent validity with all subscales of the Depression and Anxiety Stress Scales (DASS) and locus of control measures, including the Internal-External Locus of Control (Rotter, 1966) and the Locus of Control of Behaviour Scale (Craig, Franklin, & Andrews, 1984). In a student sample, the mean scores on the AxCQ have been reported to be 101.8 (SD = 15.3) for males and 95.3 (SD = 19.4) for females. In a clinical sample, males were reported to score a mean of 76.3 (SD = 20.3) and females a mean score of 72.7 (SD = 21.7). Gender differences in both the student sample and the clinical sample were found to be non-significant (Rapee et al., 1996).

The *Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998) has 19 items measuring cognitive, affective, and behavioral reactions to social interactions. Each item is rated on a 5-point Likert scale ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). Higher scores on the SIAS are interpreted as higher social interaction anxiety levels. High Cronbach's alphas have been documented to be .86 to .94 (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992; Mattick & Clarke, 1998) with test-retest reliability estimates ranging from .86 to .92 (Heimberg et al., 1992). Convergent validity has been found to be high, between .66 and .81 (Heimberg et al., 1992; Mattick & Clarke, 1998). For a community sample, the SIAS mean scores were reported at 18.2 (*SD* = 11.7) for males and 19.4 (*SD* = 11.9) for females, and for an undergraduate student sample means were reported to be 19.9 (*SD* = 10.4) for males and 18.5 (*SD* = 10.0) for females (Mattick & Clarke, 1998).

The *Social Phobia Scale* (SPS; Mattick & Clarke, 1998) is composed of 20 items that assess fears of being scrutinized while engaging in routine activities. Individuals rate their fear on a 5-point Likert scale ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). A higher score on the SPS is interpreted as indicating a higher level of fear of scrutiny or performance situations. Cronbach's alphas have ranged from .87 to .94 (Heimberg et al., 1992; Mattick & Clarke, 1998) and high test-retest reliability estimates have been reported, ranging from .66 to .93 (Heimberg et al., 1992; Mattick & Clarke, 1998). Moderate to good convergent validity (.64 to .75) has been reported between the SPS and other self-report social anxiety measures (e.g., Mattick & Clarke, 1998). For a community sample, the mean scores for the SPS were reported at 13.4 (*SD* = 11.4) for males and 15.2 (*SD* = 11.0) for females. For an undergraduate student sample, means were reported to be 13.8 (*SD* = 10.0) for males and 14.2 (*SD* = 10.2) for females (Mattick & Clarke, 1998).

The SIAS and the SPS are usually administered conjunctively to measure two distinct but related constructs theorized to compose social anxiety disorder. The SIAS assesses a person's fear of interacting in dyads and groups, while the SPS is constructed to measure the fear of being scrutinized or observed by others (Mattick & Clarke, 1998). Good internal consistency has been reported for both scales among college students, community volunteers, and patients with social phobia, agoraphobia, and simple phobia (Heimberg et al., 1992; Mattick and Clarke, 1998). Although the SIAS and the SPS have been found to be highly inter-correlated, the SIAS has been found to be more strongly related measures of social interaction anxiety, and the SPS has been shown to be related to observation/performance anxiety (Brown et al., 1997; Heimberg et al., 1992).

Procedure.

Participants were recruited from the subject pool of the Psychology department of a state university in the border region of Texas. An instruction form, which had a unique participant number, was provided to each participant during the sign-up session. Participants read and signed informed consent forms before initiating the study procedure. The consent form provided a brief description of the study and information about extra credit compensation. Individuals were then asked to complete the online questionnaires at home within 24 hours. The online site asked participants to enter their participant number. No identifying information was obtained on the questionnaires. Participants completed a battery of questionnaires including a demographic questionnaire, the SIAS, the SPS, and the AxCQ.

Results

Means and standard deviations of the SIAS, SPS, and AxCQ were calculated and gender differences on means were examined by *t*-test. Means, standard deviations, confidence intervals, respective *t*-tests, and probability values are presented in Table 1.

Table 1. *Means, Standard Deviations & t-tests*

Measure	Male (n = 120) *M (SD)* *[95% CI]*	Female (n = 343) *M (SD)* *[95% CI]*	*t*-test (df)	*p*
SIAS	21.73 (13.63) [19.26, 24.19]	22.80 (15.13) [21.29, 24.41]	t (461) = -.688	.492
SPS	15.73 (14.97) [13.03, 18.44]	19.39 (17.05) [17.58, 21.20]	t (461) = -2.09	.037*
AxCQ	93.75 (18.57) [90.39, 97.11]	89.80 (17.95) [87.90, 91.71]	t (461) = 2.05	.041*

Note. SIAS = Social Interaction Anxiety Scale; *SPS = Social Phobia Scale; AxCQ = Anxiety Control Questionnaire. CI = 95%, p* < .05*

Hypothesis 1 was not supported. The gender difference for social interaction fears was not significant (see Table 1) and males and females reported similar mean scores for social interaction fears. Hypothesis 2 was supported and for social performance fears the gender difference for mean scores was statistically significant, with females reporting higher means. As hypothesized, females reported significantly lower perceived anxiety control than males (Hypothesis 3). In comparison to males, females tended to view themselves as having trouble controlling the events that may produce their anxiety and their internal response to those events.

Correlations.

Correlations between the SIAS, SPS, and AxCQ were calculated separately by gender. Correlation coefficients are presented in Table 2.

Table 2. *Correlations*

	SIAS	AxCQ
Male (*n* = 120)		
1. Social Phobia Scale	.668**	-.484**
2. Social Interaction Anxiety Scale	-	-.445**
3. AxCQ	-	-
Female (*n* = 343)		
1. Social Phobia Scale	.667**	-.453**
2. Social Interaction Anxiety Scale	-	-.413**
3. AxCQ	-	-

Note. SIAS = Social Interaction Anxiety Scale; AxCQ = Anxiety Control Questionnaire. $p < .001$**

Supporting Hypothesis 4, a significant positive correlation between social interaction fears (SIAS) and social performance fears (SPS) was found for both males and females. Results showed that higher social interaction fears were related with higher social performance fears for males and females. The results also supported Hypothesis 5. A significant negative correlation between anxiety control perceptions and social interaction fears was found for both genders, where low perceived anxiety control was significantly correlated to higher social interaction fears reported in males and females. Individuals who perceived that they had trouble controlling their anxiety tended to experience higher social interaction anxiety symptoms.

As hypothesized in Hypothesis 6, both genders exhibited a significant negative correlation between anxiety control perceptions and social performance fear, supporting the idea that low perceived anxiety control is related to higher social performance fears. Individuals who perceived that they had trouble controlling their anxiety symptoms and their immediate situation reported higher social performance anxiety symptoms.

Regression analyses.

Regression analyses were performed to test Hypothesis 7 and Hypothesis 8. Results are presented in Table 3.

Table 3. *Regression analyses*

Criterion	Predictor Variables	R^2	ΔF	β
SIAS	Anxiety Control	.19**	-8.7**	-.42**
	Gender		-.16	-.007
	Anxiety Control X Gender		-.27	-.27
SPS	Anxiety Control	.22**	-9.63**	-.45**
	Gender		1.33	.055
	Anxiety Control X Gender		-.47	-.022

*Note. SIAS = Social Interaction Anxiety Scale; SPS = Social Phobia Scale, $p < .001$***

The regression analyses showed that the main effect of gender was not a significant unique predictor of social interaction fears. Against Hypothesis 7, the interaction terms for perceived anxiety control and gender were not significant in social interaction fears. Gender did not moderate the relationship between perceived anxiety control and social interaction fears. The regression analyses revealed that the main effect of gender was not a significant unique predictor of performance fears. Hypothesis 8 was not supported. The interaction terms for perceived anxiety control and gender were not significant in social performance fears. Similarly gender did not moderate the relationship between perceived anxiety control and social performance fears.

CHAPTER IV

DISCUSSION AND LIMITATIONS

Discussion

This study examined severity of social anxiety symptoms and levels of perceived anxiety control in a Latino college sample. The current research study demonstrated that perceived anxiety control over events and reactions to those events contributed to social interaction fears and performance fears characteristic of social anxiety disorder. Gender was assessed as a moderator of the relationship between anxiety control perceptions, social interaction, and social performance fears; however, gender was not found to influence the relationship between them.

Contrary to Hypothesis 1, the current study demonstrated no significant gender differences on means of the social interaction fears measure. Supporting Hypothesis 2, the social performance fears measure demonstrated significant gender differences. The finding that gender effects were shown in one domain but not in the other domain of social phobia symptoms is a contrast to former studies reporting higher scores in females than males on the SPS and SIAS (Mattick & Clarke, 1998, Turk et al., 1998). The finding that there were no gender differences on social interaction fear levels (Hypothesis 1) points to the possibility that Latino males could be more vulnerable to fear aspects of social interaction situations than their Caucasian male counterparts. The vulnerability might have elevated level of social interaction fears in Latinos, making males' scores comparable to the levels found in Latina females. Another possibility may be related to the tendency of Caucasian males who have been documented to underreport

symptoms (Lovibond & Rapee, 1993). While typically Caucasian males underreport symptoms, which might be partly responsible for gender differences in symptom levels, Latino males may not fully hold such a typical male tendency and may be comfortable reporting their honest symptom levels particularly when reporting social interaction anxiety. Consequently, differences in social interaction anxiety levels between Latino males and Latina females may become minimized. It could be the case that culturally shaped beliefs among Latinos affect the results of this study; such as *machismo, marianismo,* and the degree of superstitiousness in this Latino sample, factors this study were not able to address.

Hypothesis 3 was supported. The gender difference in AxCQ scores is consistent with some former findings from predominant Caucasian samples (e.g., Gould & Edelstein, 2010; Sherman et al., 1997; Zebb & Moore, 2003). Given that the previous studies with Caucasians reported inconsistent conclusions in gender differences in levels of anxiety control, more studies investigating gender and perceived anxiety control in Latinos are warranted. Overall, these findings are important, given that no studies had previously addressed the role of gender on severity of social anxiety symptoms and levels of perceived anxiety control within Latinos.

Supporting Hypotheses 4, 5, and 6, the AxCQ and SPS, SIAS were highly inter-correlated. An important finding is that participants with lower levels of perceived anxiety control reported higher social interaction and performance anxiety symptoms regardless of gender. This finding is consistent with former empirical findings obtained from predominantly Caucasian samples (e.g., Cloitre et al., 1992; Hofmann, 2005; Leung & Heimberg, 1996; Rapee et al., 1996). The AxCQ might be a potential predictor of social anxiety symptom severity possibility independent of gender and culture.

The regression analyses tested gender as a potential moderator of the relationship between levels of perceived anxiety control and severity of social anxiety symptoms. The results did not support the hypotheses that gender would moderate the associations between anxiety control perceptions and social anxiety symptom levels (Hypothesis 7 and Hypothesis 8). Males and females in the current study demonstrated similar associations between these variables. The regression results supported the possibility that perceived anxiety control may be a gender-free variable that plays a significant role in social anxiety symptoms in Latinos. The current findings suggest that Latino men and women tend to perceive their ability to control anxiety significantly differently. Yet, the role of perceived anxiety control in social anxiety symptoms does not seem to vary across genders within Latinos.

Interestingly, the mean social anxiety symptom scores of the current participants were found to be relatively higher than those reported in former studies with predominantly Caucasian samples (Heimberg et al., 1992; Mattick & Clarke, 1998; Rapee et al., 1996). It may be that Latinos in general tend to experience culturally-bound symptoms of social anxiety (e.g., *nervios*) which may have been reflected by the current scores on the social anxiety measures. Alternatively, Latinos might be vulnerable to psychological disorders including social anxiety disorder, as suggested by some previous findings (e.g., Breslau et al., 2005). Another possible explanation for this finding is that the current sample, consisting of generally healthy college students, might have included a relatively large proportion of individuals who experienced elevated social anxiety symptoms in comparison to Caucasian student populations. It might also be the case that Latinos may over-report symptom levels when compared to Caucasians. In addition, the online administration of these assessments may have promoted and facilitated symptom disclosure (e.g., Emmelkamp, 2005; Tate & Zabinski, 2004).

Limitations

The current findings were from healthy undergraduate Latino students and thus have limited generalizability to individuals with more severe social anxiety symptoms, or non-Latino individuals. Relatedly, the current study did not address Latino-specific cultural beliefs that might have affected the findings. Also, the predominant number of female participants may have affected the current results. Another limitation of this study is the nature of a cross-sectional analysis, being that a causal relationship cannot be established between the variables.
It is also possible that other unassessed comorbid psychological conditions may have confounded severity of social anxiety symptoms, levels of perceived anxiety control, or both, affecting the current findings. As mentioned, it is also possible that computerized administration of the assessments may have evoked results different from paper-pencil administration.

Despite the above shortcomings, this study was the first to address features of social anxiety symptoms and perceived anxiety control in exclusively Latino individuals. Further, the current results offer several implications. The finding that perceptions of anxiety control are uniquely related to levels of social anxiety symptoms suggests clinical implications; such as for tailored intervention and treatment aimed at improving perceptions of anxiety control for socially anxious individuals. The fact that no gender effects were found in the role of anxiety control perceptions in social anxiety symptoms suggests that any treatment targeting anxiety control perceptions to reduce social anxiety symptoms may be applied very similarly across the genders.

Future research and clinical assessments on social anxiety disorder in Latinos should examine perceived anxiety control as a potentially causal or maintenance factor of the disorder for both Latino men and women. The roles of comorbid psychological disorders in the relationship between perceived anxiety control and social anxiety disorder should be addressed.

The fact that this study did not compare the Latino sample to a control group may be addressed. Latino cultural beliefs and values as they relate to the perception of anxiety control (e.g., *machismo*, *marianismo*, and superstitiousness) should also be addressed and community samples or more heterogeneous samples should be utilized in future studies to increase generalizability and applicability of results. Additionally, both online and paper-pencil administrations might be employed to explore potential effects of the use of online interfaces on social anxiety and perceived anxiety control scores.

REFERENCES

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision: Washington, DC.

Barlow, D. H., Raffa, S. D., & Cohen, E. M. (2002). *Psychosocial treatments for panic disorders, phobias, and generalized anxiety disorder*. In P.E. Nathan & J.M. Gorman (Eds.), A Guide to Treatments that Work (2nd ed. pp. 301-335). New York: Oxford University Press.

Breslau, J., Kendler, K. S., Gaxiola-Aguilar, S., & Kessler, R. C. (2005). Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychological Medicine, 35*, 317-327. doi: 10.1017/S0033291701003514.

Brown, E. J., Turovsky, J., Heimberg, R. G., Juster, H. R., Brown, T. A., & Barlow, D. H. (1997). Validation of the Social Interaction Anxiety Scale and the Social Phobia Scale across the anxiety disorders. *Psychological Assessment, 9*, 21–27. doi: 10.1037/1040-3590.9.1.21.

Brown, T. A. White, K. S. Forsyth, J., & Barlow, D. H. (2004). The structure of perceived emotional control: Psychometric properties of a revised Anxiety Control Questionnaire. *Behavior Therapy, 35*, 75-99. doi: 10.1016/S0005-7894(04)80005-4. 11.

Chartier, M. J., Hazen, A. L., & Stein, M. B. (1998). Lifetime patterns of social phobia: findings from a controlled study. *Depression and Anxiety, 7*, 113-121. doi: 10.1002/ (SICI) 1520-6394.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In: R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: diagnosis, assessment, and treatment* (pp. 69–93). New York: Guilford Press.

Cloitre, M., Heimberg, R. G., Liebowitz, M. R., & Gitow, A. (1992). Perceptions of control in panic disorder and social phobia. *Cognitive Therapy and Research, 16*, 569-577. doi: 10.1007/BF01175142.

Craig, A. R., Franklin, J. A., & Andrews, G. (1984). A scale to measure locus of control of behavior. *British Journal of Medical Psychology, 57*, 173-180. doi: 10.1111/j.2044-8341.1984.tb01597.x.

Emmelkamp, P. G. (2005). Technological innovations in clinical assessment and psychotherapy.

Psychotherapy and Psychosomatics, *74*, 336-343. doi: 10.1159/000087780

Gould, C. E. & Edelstein, B. A. (2010). Worry, emotion control, and anxiety control in older and young adults. *Journal of Anxiety Disorders*, *24*, 759–766. doi: 10.1016/j.janxdis.2010.05.009.

Grossman, P., Wilhelm, F. H., Kawachi, I., & Sparrow, D. (2001). Gender differences in psychophysiological responses to speech stress among older social phobics: congruence and incongruence between self-evaluative and cardiovascular reactions. *Psychosomatic medicine*, *63*, 765-767. PMid: 11573025.

Heimberg, R. G., Mueller, G. P., Holt, C. S., Hope, D. A., & Liebowitz, M. R. (1992). Assessment of anxiety in social interaction and being observed by others: the Social Interaction Anxiety Scale and the Social Phobia Scale. *Behavior Therapy*, *23*, 53-73. doi: 10.1016/S0005-7894(05)80308-9.

Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behavior Research Therapy*, *35*, 741-56. doi: 10.1016/S0005-7967(97)00022-3.

Hofmann, S. G. (2004). Cognitive mediation of treatment change in social phobia. *Journal of Consulting and Clinical Psychology*, *72*, 392-399. doi: 10.1037/0022-006X.72.3.392.

Hofmann, S. G. (2005). Perception of control over anxiety mediates the relation between catastrophic thinking and social anxiety in social phobia. *Behaviour Research and Therapy*, *43*, 885-895. doi:10.1016/j.brat.2004.07.002.

Keller, M. B. (2003). The lifelong course of social anxiety disorder: a clinical perspective. *Acta Psychiatrica Scandinavia*, *108*, 85-94. doi: 10.1034/j.1600-0447.108.s417.6.x.

Keller, M. B. (2006). Social anxiety disorder clinical course and outcome: review of Harvard/Brown Anxiety Research Project (HARP) findings. *Journal of Clinical Psychiatry*, *67*, 14-19. doi: 10.10342j.1600-0447.108.S417.6.x.

Kessler, R. C., Stang, P., Wittchen, H. U., Stein, M., & Walters, E. E. (1999). Lifetime comorbidities between social phobia and mood disorders in the US National Comorbidity Survey. *Medical Psychology*, *29*, 555-567. doi: 10.1017/S0033291799008375.

Kessler, R., Chiu, W., Demler, O., & Walters, E. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS- R). *Archives of General Psychiatry*, *62*, 617-627. doi:10.1001/archpsyc.62.6.617.

Kimbrel, N. A. (2009). A model of the development and maintenance of generalized social phobia. *Clinical Psychology Review*, *28*, 592-612.

Lang, A. J. & McNeil, D. E. (2006). Use of the anxiety control questionnaire in psychiatric inpatients. *Depression and Anxiety*, *23*, 107-112. doi: 10.1002/da.20133.

Leary M. R. (2001). Social anxiety as an early warning system: a refinement and extension of the self-presentation theory. In: Hofmann SG, DiBartolo PM, editors. *From Social Anxiety to Social Phobia: Multiple Perspectives*. Boston, MA: Allyn & Bacon.

Leung, A. W. & Heimberg, R. G. (1996). Homework compliance, perceptions of control, and outcome of cognitive-behavioral treatment of social phobia. *Behavior Research Therapy, 5-6,*423-32. doi: 10.1016/0005-7967(96)00014-9.

Lovibond, E. E. & Rapee, R. M. (1993). The representation of feared outcomes. *Behaviour Research and Therapy, 31,* 595-608.

Mattick, R. P. & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy, 36,* 455-470. doi: 10.1016/S0005-7967(97)10031-6.

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research, 45,* 1027-35. doi: 10.1007/s10802-011-9551-1.

Rapee, R. M., Sanderson, W. C., & Barlow, D. H. (1988). Social phobia features across the DSM-III-R anxiety disorders. *Journal of Psychopathology and Behavioral Assessment, 10,* 287-300.

Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H. (1996). Measurement of perceived control over anxiety-related events. *Behavior Therapy, 27,* 279-293. doi: 0005-894/96/0279-0293.

Rapee, R. M. (1997). Perceived threat and perceived control as predictors of the degree of fear in physical and social situations. *Journal of Anxiety Disorders, 11,* 455-461. doi: 10.1016/S0887-6185(97)00022-4.

Rapee, R. M. & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy, 35,* 741-756. doi:10.1016/S0005-7967(97)00022-3.

Rotter, J. B. (1966). Generalized expectancies of internal versus external control of reinforcements. *Psychological Monographs: General and Applied, 80,* 1-28. doi: 10.1037/h0092976.

Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist, 45,* 489-493. doi: 10.1037/0003-066X.45.4.489.

Sanderson, W. C., Rapee, R. M., & Barlow, D. H. (1989). The influence of an illusion of control on panic attacks induced via inhalation of 5.5% carbon dioxide-enriched air. *Archives in General Psychiatry, 46,* 157-162. doi:10.1001/archpsyc.1989.01810020059010.

Schneier, F. R., Johnson, J., Hornig, C. D., Liebowitz, M. R., & Weissman, M. M. (1992). Social phobia: co-morbidity and morbidity in an epidemiologic sample. *Archives in General Psychiatry, 49*, 282-288. doi:10.1001/archpsyc.1995.03950150062011.

Sherman, A. C., Higgs, G. E., & Williams, R. L. (1997). Gender differences in the locus of control construct. *Psychology and Health, 12*, 239-248. doi: 10.1080/08870449708407402.

Solyom, L., Ledwidge, B., & Solyom, C. (1986) Delineating social phobia. *British Journal of Psychiatry*, *149*, 464-470. doi:10.1192/bjp.149.4.464.

Stein, B., McQuaid, J. R., Laffaye, C. & McCahill, M. E. (1999). Social phobia in the primary care medical setting. Journal of Family Practice, 48, 514-519. PMid: 10428248.

Tate, D. F., & Zabinski, M. F. (2004). Computer and Internet Applications for Psychological Treatment: Update for Clinicians. *Journal of Clinical Psychology, 60*, 209-220. doi: 10.1002/jclp.10247

Turk, C. L., Heimberg, R. G., Orsillo, S. M., Holt, C. S., Gitow, A., Street, L. L., Schneier, F. R., & Liebowitz, M.R. (1998). An investigation of gender differences in social phobia. *Journal of Anxiety Disorders, 12*, 209-23. PMid: P9653680.

U.S. Census Bureau. (2010). Retrieved from http:// www.census.gov.

Wittchen, H. U., Stein, M. B., & Kessler, R. C. (1999). Social fears and social phobia in a community sample of adolescents and young adults: prevalence, risk factors and co-morbidity. *Psychological Medicine, 29*, 309-323. PMid: 10218923.

Yonkers, K. A., Bruce, S. E., Dyck, I. R. & Keller, M. B. (2003). Chronicity, relapse, and illness–course of panic disorder, social phobia, and generalized anxiety disorder: findings in men and women from 8 years of follow-up. *Depression and Anxiety, 17*, 173–179. doi: 10.1002/da.10106.

Zebb, B. J. & Moore, M. C. (1999). Another look at the psychometric properties of the Anxiety Control Questionnaire. *Behaviour Research and Therapy*, *37*, 1091-1103. doi: 10.1016/S0005-7967(98)00206-X.

Zebb, B. J. & Moore, M. C. (2003). Superstitiousness and perceived anxiety control as predictors of psychological distress. *Journal of Anxiety Disorders*, 17, 115-130. doi:10.1016/j.bbr.2011.03.031.

Zvolensky, M. J., Heffner, M., Eifert, G. H., Spira, A. P., Feldner, M. T., & Brown, R. A. (2001). Incremental validity of perceived control dimensions in the differential prediction of interpretative biases for threat. *Journal of Psychopathology and Behavioral Assessment*, *23*, 76-83. doi: 10.1023/A:1010935407194.

BIOGRAPHICAL SKETCH

Delia Yazmin Villarreal is a native of Monterrey N.L., Mexico, daughter of Juan Villarreal Saenz and Delia Puente Gonzalez and sibling to John, Arthur, and Carmine. Delia and spouse Eli Cortez have one son, Sean Alexandro. In 2009, Delia received a Bachelor of Science degree in Psychology, Biology minor and completed a Master of Arts degree in Clinical Psychology in 2012 at The University of Texas – Pan American. She is employed at Tropical Texas Behavioral Health center, working with individuals with intellectual and developmental disabilities and mental health comorbidities. Delia has obtained experience in private practice of psychology under the supervision of psychologist Dr. Arthur Linskey† and Mirthala Leal, MEd and plans to continue serving individuals struggling with mental health and cognitive disabilities.