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8 Variations in the Influence of Parental Socialization of Anxiety among Clinic Referred Children

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Abstract

This study examined the relations between parental socialization of child anxious behaviors (i.e., reinforcement, punishment, modeling, transmission of information) and child anxiety and related problems at varying child sensitivity levels. Data corresponding to 70 clinic-referred children (*M* age = 9.86 years ; 50% girls; 49% Hispanic/Latino, 51% Caucasian) showed that for children with low (but not high) anxiety sensitivity, anxiety-related parental socialization behaviors were associated with more child anxiety and depression symptoms. Findings also indicated that parental socialization of anxious behaviors and anxiety sensitivity functioned similarly in the prediction of anxiety and depression across Caucasian and Hispanic/Latino children. There were no significant mean level variations across child sociodemographic characteristics in general, but anxiety-promoting parenting behaviors were twice as high in Hispanic/Latino compared to Caucasian families.

Keywords: Parenting behaviors; Child anxiety; Child depression; Anxiety sensitivity

1 Variations in the Influence of Parental Socialization of Anxiety among Clinic Referred Children
2 Theoretical models of child anxiety emphasize the role of family factors in the
3 development and maintenance of child maladaptive outcomes and consistently identify parenting
4 as relevant to anxiety disorder development [1-10]. Typically, parental warmth and
5 responsiveness are conceptually linked to lower levels of child anxiety [11, 12], while parental
6 rejection, criticism, and control are linked to elevated anxiety in children [12-15]. However,
7 when it comes to data accumulated across studies, McLeod, Wood, and Weisz [16] found in their
8 meta-analysis that parenting behaviors (i.e., withdrawal, aversiveness, warmth, overinvolvement,
9 autonomy-granting) only explained about four percent of the variance in child anxiety levels.
10 Although this finding could suggest that parenting plays a relatively minor role in children's
11 anxiety, it also is possible a more fine-grained operationalization and investigation of parental
12 socialization of child anxiety is needed. That is, previously examined parenting constructs might
13 not contribute to the development of anxiety specifically, but rather confer risk for child
14 maladjustment more broadly. For example, certain parenting factors linked to child anxiety also
15 predict childhood behavior problems that are clinically distinct from anxiety (e.g., rejection is
16 linked to antisocial behavior but also to anxiety [17]). Thus, the small association between
17 parenting and anxiety found in some studies could indicate a need to systematically study more
18 nuanced parental behaviors that are specific to the socialization of anxiety in children. In fact,
19 Ginsburg and colleagues [18] have argued for the need to study what they call "anxiety-
20 promoting" parenting behaviors, which are any parenting practices that increase the likelihood
21 that children will experience anxious symptoms. To this end, it was our objective to examine
22 anxiety-promoting parenting behaviors theorized to lead to elevated anxiety in children via a
23 closer examination of learning processes typically associated with some parenting practices [4].

1 Building on past research and learning theory, the present study examined parental
2 socialization of anxiety defined as reinforcement, punishment, and modeling (i.e., behaviorally
3 and via transmission of information) in response to children's expressions of anxious thoughts
4 and feelings. Prior research suggests that parents of anxious children engage in these anxiety-
5 promoting socialization behaviors more frequently than parents of non-anxious children [19-24].
6 For example, Dadds, Barrett, Rapee, and Ryan [24] found that parents of clinically anxious
7 children reciprocated and rewarded child avoidant responses significantly more than parents of
8 non-anxious children when asked to discuss, interpret, and respond to ambiguous laboratory-
9 based situations. As explained, by enabling and reinforcing anxious responses (i.e., promoting
10 anxious avoidance), parents might be inhibiting the development of effective coping strategies
11 while promoting avoidance coping, which leads to anxiety [25]. Continuing with modeling,
12 parents have been found to socialize anxious behaviors by describing to the child their own
13 anxious thoughts, feelings, and behaviors [26-28]. Consistent with social learning theory [29],
14 children who observe their parents respond with high anxiety to feared objects or situations often
15 imitate anxious responses when facing similar objects and situations [28, 30]. Lastly, parents also
16 may contribute to child anxious and avoidant responding by communicating to children "threat"
17 messages. As articulated by Beidel and Turner [31], parents of anxious children are more likely
18 than parents of non-anxious children to use direct instructions such as "be careful" and "don't
19 climb too high" during free play situations. These verbalizations may serve to direct children's
20 attention to the possible dangers that may (or not) be present in the environment thus creating
21 schemas that denote situations as unsafe or unmanageable and thereby should be avoided [22, 27,
22 32].

23 It is important to highlight that while parental socialization of child anxiety has been

1 linked to higher levels of fear and anxiety in clinical samples, some children who experience
2 these parenting behaviors do not have an anxiety disorder [33-37]. In fact, it appears that
3 children respond differently to similar parenting practices, including parental socialization of
4 anxious emotions. Support for this differential response theory comes from models proposing
5 that individuals with certain characteristics are more vulnerable to the effects of certain risk
6 factors (e.g., diathesis-stress model; [38, 39]) and that children with some traits (and trait levels)
7 are more sensitive to the negative (and positive) effects of parenting (differential susceptibility
8 theory; [40-43]). In the child anxiety area, for instance, few studies have examined the
9 differential response proposition in terms of the role parental socialization of child anxiety plays
10 in contexts of other child vulnerabilities [44, 45]. This relative lack of research is likely linked to
11 the fact that most child anxiety disorder risk factors are not typically anxiety specific. Also, the
12 lack of focus on levels of vulnerability (e.g., in their relation to parental socialization of anxiety)
13 may be related to a methodological need for relatively large prospective samples or specialty
14 samples (e.g., anxiety disordered children who would sufficiently show traces of a specific
15 vulnerability). Regarding the latter, data suggest that anxiety sensitivity is linked to problematic
16 anxiety levels in children [46-49]. Anxiety sensitivity is defined as the degree to which an
17 individual believes that feelings of anxiety or fear are distressing, aversive, and cause harmful
18 social, physical, and psychological consequences (e.g., trembling will lead to ridicule or
19 rejection, heart beating fast will lead to heart attack, inability to focus will lead to losing one's
20 mind, etc.) [50, 51]. Research shows that anxiety sensitivity is distinct from (but related to) both
21 fearfulness and anxiety symptoms [52-54]. For example, research shows that child anxiety
22 sensitivity uniquely predicts trait anxiety levels even after controlling for both fear and manifest
23 anxiety symptoms (this is true cross-sectionally and longitudinally) [20, 55]. Moreover, anxiety

1 sensitivity also is distinct from anxiety symptoms but related to both anxiety and depression
2 (even when controlling for anxiety in the prediction of the latter) [52, 56] possibly due to
3 similarities in the etiology and clinical phenomenology underlying anxious and depressed
4 symptoms (e.g., negative affectivity, cognitive distortions) [57]. Of unique relevance to the
5 present study, theory and research on the origins of anxiety sensitivity point to childhood
6 learning experiences [49]. In fact, four studies examined the relation between parental
7 socialization of anxiety and anxiety sensitivity. That is, using a college sample, Watt and
8 colleagues found in two studies that retrospective data supported a link between parental
9 socialization of anxiety and anxiety sensitivity and using Dutch child samples Muris and
10 colleagues found support for the concurrent relations between parental socialization of anxiety
11 and anxiety sensitivity in two other studies [58-61]. Given the potential influence of parenting on
12 child anxiety sensitivity and the well-documented link between anxiety sensitivity and
13 anxiety/depression, we believe an important next step is to understand the relation between
14 parental socialization of anxiety and child anxiety sensitivity in the prediction of child anxiety
15 and depression symptoms. With a gain in knowledge regarding these relations, this research has
16 the potential to inform theory about the mechanisms by which anxiety problems develop and
17 may be more effectively reversed via intervention efforts.

18 Thus, the present study examined the effects of parental socialization of child anxiety
19 behaviors on child anxiety (and related symptoms) among children with different levels of
20 anxiety sensitivity. Herein, we relied on child self-reports, knowing that data supporting our
21 predictions could serve to inform further research, ideally based on behavioral observations [62,
22 63]. Specifically, the present study examined the relation among parental socialization of
23 children's anxious thoughts and behaviors (i.e., reinforcement, punishment, modeling,

1 transmission of information) and anxiety-related symptoms in childhood. We predicted that
2 parenting factors would interact with child anxiety sensitivity levels to influence symptoms of
3 anxiety and related problems. In addition to focusing on anxiety, it was deemed important to also
4 focus on depression because of the high comorbidity and symptom overlap among these
5 problems, as noted earlier [64, 65]. Also, by examining depression (in addition to anxiety), we
6 feel this research could help discern whether parenting and anxiety sensitivity are unique or non-
7 specific factors associated with child maladjustment (an issue relevant to Research Domain
8 Criteria; [66, 67]). We thus predicted that parental socialization of children's expressions of
9 anxious thoughts and feelings would serve as a shared factor for these symptom types, whereas
10 anxiety sensitivity would be a more robust predictor of child anxiety symptoms compared to
11 child depression symptoms. Because of the nature of our sample, we also conducted data
12 analyses by ethnicity. That is, our dataset included a sizeable proportion of Hispanic/Latino
13 children (mostly Mexican-origin) and thus parental socialization was considered separately for
14 these groups. More specifically, when it comes to parental socialization of emotion, it has been
15 suggested that parents select parenting practices designed to socialize their children's experience,
16 expression, and regulation of emotion in a manner that reflects their cultural values [68]. To this
17 end, Hispanic/Latino parents have a tendency to emphasize children's ability to exercise of self-
18 control (restraint, *respeto*), get along with others (*simpatia*), and be obedient (*bien portados*)
19 [69]. For example, research shows that Hispanic/Latino parents exert more direct control over
20 their children's emotion expression and behavior [70, 71], use fewer emotion words when
21 speaking with their children [72], and exhibit higher levels of authoritarian parenting styles (i.e.,
22 demanding and unresponsive behaviors [73, 74]) than parents from other backgrounds. In this
23 context, limited research attention has been given to the ways Hispanic/Latino parents socialize

1 child anxiety. However, emerging evidence suggests cross-ethnic variations in both the type of
2 socialization practices and the effects of these practices on child anxiety may exist [68, 75-78].
3 For instance, Varela and colleagues [79] investigated a tendency for parents to communicate
4 anxious (i.e., psychological) or somatic (i.e., physical) interpretations of ambiguous symptom
5 situations to their children during a discussion task. In their study, Mexican-origin parents
6 generated more somatic explanations and fewer anxious explanations compared to their
7 Caucasian counterparts, a finding consistent with using somatization to explain culturally
8 sanctioned emotional distress in traditional Mexican culture [80, 81]. In addition, Luis, Varela,
9 and Moore, in another study [78], found that overcontrolling parenting behaviors were linked to
10 lower levels of anxious behaviors for Mexican American youth but to higher levels of anxious
11 behaviors in Caucasian youth. As such, and based on these data, we anticipated cross-ethnic
12 variations in the relations among parental socialization, anxiety sensitivity, and anxiety (along
13 with depression) and thus conducted analyses for Hispanic/Latino children separately from their
14 Caucasian counterparts.

15 **Methods**

16 **Participants**

17 Participants were 70 children (6 to 16 years old; M age = 9.86, SD = 2.59; 50% girls)
18 referred to a university-based anxiety disorders clinic by school staff (teachers, school
19 counselors, nurses, school psychologists, or social workers) due to excessive fears and/or
20 worries. Inclusion and exclusion criteria were ascertained via the Anxiety Disorders Interview
21 Schedule for DSM-IV: Child and Parent Versions (ADIS-C/P; [82]). Exclusion criteria were
22 developmental delays, psychosis, or schizophrenia. Based on the ADIS-C/P, 62 children met
23 diagnostic criteria for an anxiety disorder. More specifically, 15 received a primary diagnosis of

1 separation anxiety disorder, 14 social anxiety disorder, 13 generalized anxiety disorder, 13
2 specific phobia, five obsessive compulsive disorder, and two panic with agoraphobia. Eight of
3 the children exhibited anxiety disorder symptoms as the principal problem but did not meet
4 criteria for an anxiety disorder diagnosis. Prior research has shown more similarities than
5 differences among children who are clinic referred and impaired but undiagnosed and those who
6 meet criteria for an anxiety disorder; thus suggesting that a fewer number of DSM symptoms
7 should not preclude this group of children from being considered ‘clinically anxious’ [83]. As
8 such, data pertaining to these children were included in the current study. In this sample, 34
9 children (49%) were Caucasian and 36 (51%) were Hispanic/Latino (mostly Mexican-origin).
10 Median annual family incomes ranged from \$24,000 to \$90,000.

11 **Measures**

12 *Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions (ADIS-IV:*
13 *C/P)* [82] are semi-structured diagnostic interviews designed to assess for anxiety disorders and
14 other major childhood disorders according to DSM-IV criteria. To determine diagnoses, separate
15 interviews with the child and parent using the child and parent versions of the ADIS-IV were
16 conducted. The clinicians assigned diagnoses that both sources agreed were most interfering, as
17 delineated in the ADIS-IV: C/P guide [82]. The diagnosis/disorder that was deemed most
18 interfering or disturbing was rendered primary. Previous research has found that the ADIS-IV:
19 C/P yields reliable anxiety symptom counts (intraclass correlation coefficients [ICCs] = .78 to
20 .95 for ADIS-C, .81 to .96 for ADIS-P), diagnoses (κ = .80 to .92), and clinician severity ratings
21 (r_s = .80 to .84) [84].

22 *Multidimensional Anxiety Scale for Children (MASC)* [85, 86] is a 39-item self-rating
23 scale designed to assess anxiety symptoms across four domains: physical symptoms, harm

1 avoidance, social anxiety, and separation anxiety/panic. Sample items include: “My heart races
2 or skips a beat,” “I stay away from things that upset me,” “I worry about other people laughing at
3 me,” “I get scared when my parents go away.” Children report the extent to which each
4 statement is true for them based on a four-point scale (0 = *never true*, 1 = *rarely true*, 2 =
5 *sometimes true*, 3 = *often true*). Internal consistencies of the MASC have been reported as
6 ranging from 0.87 to 0.90 and estimates of concurrent validity have been found to range from
7 (*rs*) 0.60 to 0.69 [86, 87]. The internal consistency (alpha) coefficient for the MASC total scale
8 was 0.91 for the current sample.

9 *Children’s Depression Inventory (CDI)* [88] is a 27-item self-rating scale that assesses
10 cognitive and behavioral aspects of depression in children and adolescents using a three-choice
11 format (e.g., 0 = “*I am sad once in a while*,” 1 = “*I am sad many times*,” 2 = “*I am sad all the*
12 *time*”; 0 = “*I feel like crying every day*,” 1 = “*I feel like crying many days*,” 2 = “*I feel like*
13 *crying once in a while*”). Internal consistencies of the CDI have been reported as ranging from
14 0.83 to 0.89 and test–retest reliabilities have been reported as ranging from 0.74 to 0.77 [89]. The
15 CDI has been found to discriminate between psychiatric and nonclinic samples; the CDI also has
16 been found to correlate with clinicians’ independent global depression ratings (e.g., $r = 0.55$;
17 [88]). In this sample, internal consistency (alpha coefficient) for the CDI total scale was 0.89.

18 *Childhood Anxiety Sensitivity Index (CASI)* [54] is an 18-item measure designed to assess
19 the extent to which children and adolescents view the experience of anxiety- related
20 somatic/physiological symptoms as distressing or aversive. Sample items include: “It scares me
21 when I feel ‘shaky,’” “When I’m afraid, I worry that I might be crazy,” “I don’t want other
22 people to know when I’m afraid.” Children report the extent to which they agree with each
23 statement based on a three-point scale (1 = *none*, 2 = *some*, 3 = *a lot*). Previous research has

1 found the CASI to be psychometrically sound: Internal consistency (alpha) coefficients of 0.87
2 and test-retest reliability rates using a 2-week retest interval of 0.79 were reported for clinical
3 samples [54]. Moreover, Weems et al. [55] found the CASI to have incremental validity such
4 that scores predicted variance in trait anxiety that was not predicted by other measures (i.e.,
5 Revised Children’s Manifest Anxiety Scale [90] and Fear Survey Schedule for Children-Revised
6 [91]). The internal consistency (alpha) coefficient for the CASI total scale was 0.91 for the
7 current sample.

8 *Parental socialization of anxious behaviors interview schedule (P-SABIS; [92]) is a*
9 *modified version of the Learning History Questionnaire (LHQ; [59, 93]). P-SABIS scores reflect*
10 *the degree to which parents or caregivers transmit information, model, reinforce, and/or punish*
11 *child anxious emotion expression. To identify parental socialization relevant to child anxiety, the*
12 *P-SABIS was administered as a follow-up to items endorsed by the child on the Negative Affect*
13 *Self-Statement Questionnaire (NASSQ) [94] and the Physiological Hyperarousal Scale for*
14 *Children (PHS-C) [95, 96]. This multi-measure approach allowed us to ascertain the extent to*
15 *which parents or caregivers transmitted information, modeled, reinforced, and/or punished child*
16 *emotion expression relevant to current anxiety symptoms (based on the NASSQ and PH-C).*
17 *More specifically, the P-SABIS is comprised of 19-items and children respond using a 3-point*
18 *scale (0 = none, 1 = some, 2 = a lot). Sample P-SABIS items include: “When you experience*
19 *[anxiety symptom]... do you skip your school work, homework, or jobs around the house?”,*
20 *“...do you get special things. Like special foods or presents?”, “do your parents tell you that*
21 *something bad may happen to you when you feel this way?”, “do your parents seem scared or*
22 *nervous about how you are feeling?” Similar to its adult counterpart (the LHQ), P-SABIS scores*
23 *are derived by multiplying the number of anxiety items/symptoms positively endorsed by the*

1 mean frequency of parental socialization experiences positively endorsed as relevant to the target
2 symptom. In this study, the internal consistency (alpha) coefficient for the P-SABIS was 0.94.

3 **Procedures**

4 Study procedures were approved by the university's Institutional Review Board. After
5 parents' informed consent (assent for children) was obtained, the Anxiety Disorders Interview
6 Schedule for DSM-IV: Child and Parent Versions (ADIS-IV: C/P) [82], the P-SABIS and a
7 battery of self-report measures were administered. Bilingual research assistants administered
8 Spanish versions of the consent forms, ADIS-IV, and questionnaires to Hispanic/Latino parents
9 as needed. All children indicated a preference for the English language materials and were
10 assisted, as necessary, by a trained research assistant who either read aloud the self-report
11 questions to younger children or monitored completion of the questionnaires. The P-SABIS was
12 administered to participant children by a trained research assistant using a structured interview
13 approach. No issues related to comprehension of materials were reported or observed. Only data
14 corresponding to Caucasian and Hispanic/Latino children were used for this study's secondary
15 data analyses to allow exploration of hypotheses using a cross-ethnic comparative approach.

16 **Results**

17 **Preliminary Analyses.** Table 1 shows means and standard deviations for clinical
18 characteristics corresponding to the total sample and separately by ethnicity. As shown,
19 Hispanic/Latino children reported greater parental socialization of their anxious behaviors than
20 Caucasian children [P-SABIS; $t(68) = 2.50, p < .05$]. No significant differences were found
21 between the ethnic groups on the CASI, MASC, or CDI. Preliminary analyses indicated that all
22 variables were normally distributed (skewness < 2 and kurtosis < 7 ; [97]). Correlations among

1 the clinical characteristics are presented in Table 2 and several coefficients were statistically
2 significant.

3 Outliers were examined using two measures of influence- DFFITS and DFBETAS values
4 in SPSS version 20 [98]. DFFITS indicates the number of standard errors a predicted score
5 changes with the inclusion of a case, and DFBETAS indicates the standardized change in an
6 individual regression coefficient by presence of the data point. Because the sample size for this
7 study is small to moderate, a cutoff of less than one was used to identify influential cases [99].
8 Analyses suggested the absence of any outliers influencing the results and so all cases were
9 retained. A survey of missingness showed that less than 1% of data were missing. Missingness
10 was not correlated with any sociodemographic and child clinical characteristics and therefore
11 assumed to have occurred at random.

12 **Parental Socialization of Anxiety and Related Symptoms.** Regression analyses were
13 used to explore the prediction of MASC and CDI from parental socialization of child anxious
14 behaviors and CASI. In each model, child age and sex were entered simultaneously as covariates
15 at step 1 and mean centered scores on the parental socialization variable, CASI scores, and a P-
16 SABIS \times CASI interaction term were included in step 2. Regression models were tested
17 separately for Caucasian versus Hispanic/Latino children and results are shown in Table 3.

18 For Hispanic/Latino children, results of the first regression model revealed that the P-
19 SABIS, CASI, and P-SABIS \times CASI interaction significantly predicted MASC-measured
20 anxiety (controlling for age and sex), $\Delta R^2 = .64$, $F(5,30) = 16.98$, $p < .001$. Specifically, the P-
21 SABIS ($\beta = .36$, $p = .03$) and CASI ($\beta = .61$, $p < .01$) both predicted higher MASC scores.
22 Following Cohen et al. (2003), the significant P-SABIS \times CASI interaction ($\beta = -.31$, $p = .01$)
23 was probed by examining simple slopes. The simple slope of P-SABIS at low to average levels

1 of CASI was significant in predicting MASC. That is, when CASI level was 1 SD below the
2 mean, the simple slope of P-SABIS on MASC scores was significant ($b = .81, t = 3.17, p = .01$)
3 and at mean levels of CASI, the simple slope of P-SABIS on MASC scores also was significant
4 ($b = .36, t = 2.23, p = .03$). On the other hand, when CASI level was 1 SD above the mean, the
5 simple slope of P-SABIS on MASC scores was not statistically significant. Turning to the CDI,
6 regression model revealed that the P-SABIS, CASI, and P-SABIS \times CASI interaction
7 significantly predicted CDI-measured depression (controlling for age and sex) for
8 Hispanic/Latino children, $\Delta R^2 = .38, F(5,30) = 4.62, p = .003$. More specifically, the CDI was
9 significantly predicted by P-SABIS ($\beta = .80, p < .01$) and the P-SABIS \times CASI interaction term
10 ($\beta = -.37, p = .02$). In the prediction of the CDI, CASI did not reach statistical significance.
11 Following Cohen et al. [99], the significant P-SABIS \times CASI interaction was probed by
12 examining simple slopes. The simple slope of P-SABIS at low to average levels of CASI was
13 significant in predicting CDI. That is, when CASI level was 1 SD below the mean, the simple
14 slope of P-SABIS on CDI scores was significant ($b = 1.33, t = 3.6, p < .01$) and at mean levels of
15 CASI the simple slope of P-SABIS on CDI scores also was significant ($b = .80, t = 3.33, p < .01$).
16 On the other hand, when CASI level was 1 SD above the mean, the simple slope of P-SABIS on
17 CDI scores was not statistically significant.

18 For Caucasian children, results from the regression model showed that the P-SABIS,
19 CASI, and P-SABIS \times CASI interaction significantly predicted MASC-measured anxiety
20 (controlling for age and sex), $\Delta R^2 = .54, F(5,29) = 7.51, p < .001$. MASC was significantly
21 predicted by the P-SABIS ($\beta = .78, p < .01$) and the P-SABIS \times CASI interaction ($\beta = -.51, p =$
22 $.02$). In the prediction of the MASC for Caucasian children, CASI did not reach statistical
23 significance. Following Cohen et al. [99], the significant P-SABIS \times CASI interaction was

1 probed by examining simple slopes. The simple slope of P-SABIS at low levels of CASI was
2 significant in predicting MASC. That is, when CASI level was 1 SD below the mean, the simple
3 slope of P-SABIS on MASC scores was significant ($b = 1.05$, $t = 3.89$, $p < .01$) and at mean
4 levels of CASI, the simple slope of P-SABIS on MASC scores was also significant ($b = .78$, $t =$
5 3.82 , $p < .01$). On the other hand, when CASI level was 1 SD above the mean, the simple slope
6 of P-SABIS on MASC scores is not statistically significant. Results from the regression model
7 focusing on the CDI showed that the P-SABIS, CASI, and P-SABIS \times CASI interaction
8 significantly predicted CDI-measured depression (controlling for age and sex), $\Delta R^2 = .68$,
9 $F(5,29) = 14.86$, $p < .001$. CDI scores were predicted by P-SABIS ($\beta = .43$, $p = .01$) but CASI
10 and the P-SABIS \times CASI interaction term did not reach statistical significance.

11 **Discussion**

12 Findings extend previous knowledge about the parenting and child anxiety relations and
13 this is the first study to examine and demonstrate variations in the link between parental
14 socialization and child anxiety levels as a function of child anxiety sensitivity. While interplays
15 between parenting and child symptoms have been articulated in the literature [100, 101], this
16 study reveals new knowledge showing that for children with low anxiety sensitivity levels,
17 anxiety-related parental socialization processes exerted a robust deleterious and concurrent effect
18 on child anxiety levels. The effects of anxiety-related parental socialization processes did not
19 reach significance in the concurrent prediction of child anxiety for children with high anxiety
20 sensitivity levels. Thus, findings provide evidence for individual child-level variations in the
21 influence parenting may exert on child anxiety but the pattern of results varied from that posited
22 by well-established differential response theory.

1 Conceptually, diathesis-stress and differential susceptibility theories would predict that
2 children with *high* (not low) anxiety sensitivity would show greater vulnerability to parental
3 socialization behaviors and thus report greater internalizing symptoms; however, our findings did
4 not support this proposition. For our findings, other theoretical explanations may be more useful.
5 That is, from an open systems theory perspective, parental socialization and anxiety sensitivity
6 may represent different paths to a similar or convergent outcome (anxiety symptoms) because of
7 equifinality [102, 103]. Moreover, in the current sample, anxiety sensitivity predicted
8 significantly more anxiety symptoms in Hispanic/Latino children but not in Caucasian children
9 suggesting there may be different pathways to anxiety for some youth compared to others on the
10 basis of culture and/or contexts. Lastly, from an attention theory perspective [104, 105], parental
11 socialization and anxiety sensitivity may be influencing a common mechanism in the
12 maintenance of anxiety vis-à-vis self-directed attention toward threat as it is the case with
13 anxiety sensitivity (“When I notice that my heart is beating fast, I worry that there might be
14 something wrong with me”) or parent-directed attention toward threat as it is the case with
15 parental socialization (“... parents tell you that they worry about you feeling this way”). Thus, we
16 are proposing a synthesis in that our findings might be tapping on a common process (e.g.,
17 attention) by which anxiety is maintained (or even exacerbated [106]) but activated by distinct
18 paths (parental socialization, anxiety sensitivity). And, perhaps to better understand the reason
19 for these varying paths, future research could examine the activating roles of cultural and
20 contextual settings.

21 Turning to child depression levels, this study showed that for children with low anxiety
22 sensitivity levels, anxiety-related parental socialization processes exerted a concurrent effect on
23 their depression. On the other hand, the effects of anxiety-related parental socialization processes

1 did not reach significance in the concurrent prediction of child depression levels for children
2 with high anxiety sensitivity levels. The interaction effect in the regression model reached
3 statistical significance for Hispanic/Latino and approached significance for Caucasian children.
4 We believe that interpreting this effect for Hispanic/Latino children may require a culturally
5 responsive explanation as well. That is, the parental behaviors indexed in this study alleviate
6 (rather than exacerbate) symptoms of depression for Hispanic/Latino children with elevated
7 anxiety sensitivity (this was not the case for Caucasian children in this study). This is possible
8 because what our traditional parenting measure conceptualizes as positive reinforcement of child
9 anxious behaviors also could be defined as *familismo* (a cultural factor implicated as a protective
10 factor in the research literature; [107-110]). For example, our measure of parental socialization
11 includes the item “When you experience [*anxiety symptom*], do you get special attention or get to
12 spend special time with your parents?” and the Mexican American Cultural Values Scale
13 (MACVS; [111]; a measure that includes a *familismo* scale) includes several items that are
14 similar (such as “Family provides a sense of security because they will always be there for
15 you”). Thus, Hispanic/Latino children may be interpreting some parental socialization of anxiety
16 items within a schema of *familismo* support (the cultural value emphasizing family closeness and
17 reliance on family members as the primary source of support). These possibilities, however,
18 require careful examination in future research and possibly by using mixed methods.

19 Taken together, we believe our primary findings are robust for several reasons. First,
20 well-established developmental psychopathology and anxiety theory as well as cultural
21 contextual factors relevant to Hispanic/Latino children and families help explain the results [8,
22 68, 112]. Second, the parental socialization and child mental health literature [28, 113] as well as
23 literature supporting common factors linked to anxiety and depression [64, 65, 114] are

1 consistent with our results indicating that parenting behaviors predict both these types of child
2 symptoms, although this was true under specific conditions. Third, consistent with past research,
3 our study replicated the well-established relations among anxiety sensitivity and anxiety
4 symptoms among children [46-49, 114-116]. In terms of implications, it is premature of offer
5 recommendations to providers, teachers, or parents. However, if these findings replicate, then it
6 would be important to explore the extent to which intervention efforts (e.g., parenting programs)
7 aimed at targeting problematic child anxiety might need to be refined. It also would be important
8 to establish the need for developing measurement strategies that integrate data relevant to more
9 comprehensive child assessments (e.g., sensitivities + parental socialization) to achieve more
10 personalized child profiles that are relevant to a presenting problem (e.g., anxiety).

11 Several limitations should be noted. First, the sample size for this study likely placed
12 restrictions on our ability to detect small effects and statistical significance in our models (e.g.,
13 some of our non-significant p-values ranged from .10 to .17). In addition, data used in the current
14 study was cross-sectional and therefore precludes our ability to make conclusions related to
15 possible causal associations between parental socialization, anxiety sensitivity, and anxiety and
16 related symptoms. However, several significant relations discussed are robust and consistent
17 with previous theory and research. Second, our primary findings were based on measures of
18 child anxiety sensitivity and parental socialization of anxiety behaviors that might be somewhat
19 limited. In fact, data on cross-ethnic measurement invariance is limited in the field of child
20 anxiety, although the research published to date indicates that most measures are robust [117-
21 119]. Nonetheless, despite our measures' excellent reliability and validity, future research should
22 examine their cross-ethnic (Hispanic/Latino, Caucasian) measurement invariance. For example,
23 given their tendency to experience more physiological symptoms of anxiety than their Caucasian

1 counterparts, Hispanic/Latino children may respond differently to items on the Child Anxiety
2 Sensitivity Index [120]. In addition, the current study relied on child self-report of parental
3 socialization behaviors, as parent report and observational data were not available in the dataset
4 for these secondary analyses. Measuring children's perceptions of parenting behaviors is sensible
5 given that children may be more influenced by their interpretations of parents' actions rather than
6 actual parenting behaviors or the behaviors self-reported by parents [121, 122]. However, there
7 are typically low levels of agreement between parent and child report of parenting behavior [122]
8 with youth reporting less positive parenting than caregivers [123]. Therefore, future research
9 investigating the influence of parental socialization behaviors on child anxiety should
10 incorporate parent report and observational data. Third, the Hispanic/Latino children in our
11 sample were largely Mexican-origin but not necessarily a homogeneous group. As a result, our
12 findings might only generalize to a specific segment of these minority children (e.g., those who
13 adhere less/more to Mexican values, those living near poverty). For this reason, it would be
14 important for future studies to examine whether cultural orientation and/or socioeconomic status
15 may have moderated effects.

16 **Summary**

17 This study examined the influence of parental socialization of child anxious behaviors
18 (i.e., reinforcement, punishment, modeling, transmission of information) on child anxiety and
19 related problems (i.e., depression) at varying child sensitivity levels. Data corresponding to 70
20 clinic-referred children revealed that for children with low (but not high) anxiety sensitivity,
21 anxiety-related parental socialization behaviors were associated with more child anxiety and
22 depression symptoms. Findings also indicated that parental socialization of anxious behaviors
23 and anxiety sensitivity functioned similarly in the prediction of anxiety and depression across

1 Caucasian and Hispanic/Latino (primarily Mexican-origin children). However, some cross-ethnic
2 differences emerged such that average anxiety-promoting parenting behaviors were twice as
3 prevalent in Hispanic/Latino compared to Caucasians and parental socialization appeared to
4 alleviate depression for Hispanic/Latino (but not Caucasian) children with elevated anxiety
5 sensitivity levels. Taken together, these findings highlight the importance of carefully
6 considering the role of parental socialization of child anxious emotion in the development and
7 treatment of child anxiety and related disorders.

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1 Table 1

2 *Means and Standard Deviations for Child Clinical Characteristics*

	<i>Total Sample</i>	<i>Hispanic/Latino</i>	<i>Caucasian</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
P-SABIS	24.76 (31.18)	33.54 (35.01) _a	15.46 (23.67) _a
CASI	27.33 (8.06)	28.08 (8.37)	26.53 (7.76)
MASC	49.14 (20.45)	48.83 (22.93)	49.47 (17.79)
CDI	9.80 (7.94)	11.33 (7.19)	8.18 (8.47)

Note. P-SABIS= Parental Socialization of Anxious Behaviors Interview

Schedule; CASI= Childhood Anxiety Sensitivity Index; MASC=

Multidimensional Anxiety Scale for Children, CDI= Children's Depression

Inventory. Means sharing the same subscripts are statistically different from each

other, $p < .05$.

Table 2

Intercorrelations among Child Clinical Characteristics

	1	2	3	4
1. P-SABIS	---	.73**	.67**	.80**
2. CASI	.79**	---	.57**	.76**
3. MASC	.72**	.80**	---	.48**
4. CDI	.48**	.33	.49**	---

Note. Correlations for Caucasian youth are above the diagonal ($N = 34$).

Correlations for Hispanic/Latino youth are below the diagonal ($N = 36$). P-SABIS= Parental Socialization of Anxious Behaviors Interview Schedule; CASI= Childhood Anxiety Sensitivity Index; MASC= Multidimensional Anxiety Scale for Children, CDI= Children's Depression Inventory.

** $p < .01$; * $p < .05$

Table 3

Hierarchical Regressions of P-SABIS and CASI on MASC and CDI

Hispanic/Latino	MASC				CDI			
	β	<i>t value</i>	<i>p value</i>	ΔR^2	β	<i>t value</i>	<i>p value</i>	ΔR^2
Step 1				.10				.06
Age	-.02	.13	.90		.24	1.38	.18	
Sex	-.31	1.88	.07		-.06	.34	.74	
Step 2				.74**				.44**
P-SABIS	.36	2.23	.03		.80	3.33	<.01	
CASI	.61	3.95	<.01		-.11	.48	.64	
P-SABIS x CASI	-.31	2.92	<.01		-.37	2.39	.02	
Caucasian								
Step 1				.04				.05
Age	.20	1.10	.28		.17	.96	.34	
Sex	.01	.01	.99		-.11	.61	.55	
Step 2				.57**				.73**
P-SABIS	.78	3.82	<.01		.43	2.61	.01	
CASI	.39	1.88	.07		.28	1.71	.10	
P-SABIS x CASI	-.51	2.46	.02		-.23	1.39	.17	

Note. P-SABIS= Parental Socialization of Anxious Behaviors Interview Schedule; CASI= Childhood Anxiety Sensitivity Index; MASC= Multidimensional Anxiety Scale for Children, CDI= Children’s Depression Inventory.

** $p < .01$, * $p < .05$

