

Invalidation, Experiential Avoidance and Child Psychopathology

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor of Philosophy in the Department of
Psychology and Neuroscience in the Graduate School
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ABSTRACT

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Abstract

Although it has been hypothesized that chronic emotional invalidation by a parent may have lasting effects on later ability to regulate emotions, and may increase the chances of experiencing symptoms of psychopathology, the possible mechanisms surrounding this relationship have not been adequately explored. Further, many investigations have used retrospective reports of invalidation, which may be subject to bias. This pilot study of 19 adolescent-parent dyads explored associations between invalidation, experiential avoidance, and child symptoms of psychopathology in a cross sectional design. Retrospective reports of invalidation as well as an observationally-coded measure of invalidation during laboratory discussions of emotion were utilized, and compared for agreement. It was found that adolescent-reported recalled invalidation seemed to show a stronger pattern of association with observationally coded invalidation than did parent reports. Two mediational models and a direct model were proposed and probed within the limits of a small sample. These hypotheses showed some promise for further exploration. The feasibility and acceptability of a larger investigation of these questions is also discussed. This pilot study was found to be acceptable to participants; however, recruitment of adolescents from a clinical population - and their parents to participate with them - was the greatest obstacle to feasibility for a larger study.

Dedication

This work is dedicated to the many, many individuals who contributed to or supported me through my dissertation in ways large and small, especially:

My good friends. My grad school friends, my intern friends, and of course The Ladies.

Without their thoughtfulness and laughter, many a tough day would have been tougher.

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1. Introduction

Parent behavior and parenting practices are often cited as factors in the development of emotion regulation in children, especially in the case of maltreated children and in relation to later psychopathology in children (e.g., Gottman, Katz, & Hooven, 1996; Lorber & Egelund, 2009; Robinson, Morris, Heller, Scheeringa, Boris, & Smyke, 2008; Shipman & Zeman, 2001). Certainly the development of psychopathology is a transactional process (Sroufe, 1997), and parent behaviors are influential in many developmental tasks, including learning how to regulate one's own emotions. Although such investigations are not intended to claim that parent behaviors are the only factors in determining later child outcomes, the information gained from them can inform and improve psychological treatment and prevention efforts (Tiwari, Podell, Martin, Mychailyszyn, Furr, & Kendall, 2008). This pilot study aimed to follow in this suit: a preliminary investigation into the effects of particular parental behaviors on child emotion regulation and symptoms of psychopathology, intended to gain information upon which more sophisticated examinations of these questions could be based, and in order to potentially inform and improve future psychological interventions. It was also intended to probe possible connections between invalidation and experiential avoidance in the etiology of psychopathology, an area of study which has not yet been solidly explored.

1.1 Invalidation

One way in which parents may negatively influence the emotional development of their children is through a pattern of behaviors called invalidation. Invalidation, in this sense of the term, is characterized by erratic, inappropriate, or extreme responses to an individual's emotions, thoughts, wants, and other internal or private behaviors; to his/her valid overt or public behavior; or to his/her sense of self and self-initiated behavior. It may also include a consistent minimization of the individual's valid difficulties. This pattern of response is experienced by the child - or anyone on the receiving end of invalidation - as pervasively dismissive, minimizing, trivializing, criticizing, over-simplifying, and punishing of emotional experience (Fruzzetti, Shenk & Hoffman, 2005; Linehan, 1993). Invalidation encompasses both the verbal and nonverbal responses which communicate to the child that his/her experience is not correct, is flawed, or is otherwise not valid. In contrast, validation expresses that the responses of another person are reasonable or sensible in the given context (Linehan, 1993). Invalidation and validation both communicate responses to private, internal experiences such as thoughts and feelings as well as responses to behaviors, and can be either verbal or behavioral in nature (Fruzzetti & Shenk, 2008).

1.1.1 Effects of Parental Invalidation on Children

It has been hypothesized that a consistent pattern of parental invalidation of emotions, especially during the critical preschool age when children are engaged in a

great deal of emotional development, negatively affects a child's ability to regulate emotion by functioning to erode his/her ability to correctly label emotions, and/or to express congruent responses to emotional experiences, and/or to generate effective coping strategies for negative emotions (Denham & Kochanoff, 2002; Eisenberg, et al., 2001; Gottman, Katz & Hooven, 1996; Shipman & Zeman, 2001). In this way, it is thought that consistent invalidation from a parent could have long-lasting negative effects on a child's emotional life. Several empirical investigations have indeed linked parental invalidation and difficulties in the development of emotion regulation. For example, Eisenberg, Fabes & Murphy (1996) found that maternal minimization of children's emotions was associated with children's use of avoidant coping strategies to manage emotional distress. Subsequently, a follow-up study several years later found that children whose parents tended to punish and/or question their emotional experiences demonstrated more difficulty managing their emotions (Eisenberg et al., 1999). Furthermore, a study of emotional validation and invalidation in maltreating and non-maltreating mothers found that the association between maltreatment status and children's ability to regulate their emotions in an adaptive manner was mediated by maternal invalidation (Shipman et al., 2007). Invalidation has also been linked to manifestations of emotion regulation deficits after childhood. Parental criticism of adolescents was found to be strongly associated with self-injurious thoughts and behaviors (thought to be due to emotional dysregulation) experienced by those

adolescents (Wedig & Nock, 2007). In adults, Krause, Mendelson & Lynch (2003) found support for a model of the effect of emotional invalidation in childhood on adult psychological distress, wherein emotional inhibition mediated the association between invalidation recalled by the adults to have been experienced during childhood and their adult psychological difficulties. This investigation utilized only retrospective reports of the invalidation participating adults had received during childhood, a methodological difficulty which necessarily weakens the conclusions one is able to draw from the observed associations. However, because parental socialization of emotional regulation in childhood and adolescence may be of critical importance, it seems plausible that those deficits could persist beyond the time period of direct influence of parents on their children.

1.1.2 BPD: A Case of the Effects of Parental Invalidation?

As further contribution to the understanding of the effects of parental invalidation on the development of emotion regulation, it has been hypothesized that invalidation within early close relationships may contribute to the specific etiology of Borderline Personality Disorder (BPD) in later life. The biosocial theory of the development of BPD (Linehan, 1993) proposes a transactional relationship between three major factors: emotional vulnerability, emotional dysregulation, and an invalidating environment. Although the role of invalidation has received considerable attention in the theory of the etiology of BPD (see Fruzzetti, Shenk & Hoffman, 2005, for

review), indirect evidence is more abundant and easily achieved than direct. In one study, 72% of patients with BPD reported chronically devaluative and/or blaming statements by parents (Zanarini, Gunderson, Marino, Schwartz & Frankenburg, 1989). Also, some investigations have utilized reports of more general family emotional environment variables including lack of parental warmth, neglect, or emotional overinvolvement which may capture some of the components of invalidation. For example, in comparison to a healthy control group, a group of adults diagnosed with BPD were found to report significantly more inappropriate rearing styles such as restriction of autonomy or inappropriate punishment (Bandelow, Krause, Wedkind, Broocks, Hajak & R  ther, 2005). Similarly, Zweig-Frank and Paris (1991) found that adults with BPD remembered both parents as being significantly more controlling and more emotionally neglectful than non-BPD adults. In the case of investigations into the associations between past parental behavior and current psychological distress, it is important to note that recall bias - particularly in individuals who have difficulty regulating emotion and in interpersonal relationships as individuals diagnosed with BPD do - muddies the associations between recalled emotionally invalidating childhood experiences and later BPD. Indeed, Gunderson and Lyoo (1997) found that parents of individuals with BPD agreed more with their spouses and with normative standards regarding the family environment than with their grown children, who reported significantly more negative family environment and relationships. This does not

necessarily mean that the recall of the individuals with BPD is insignificant; however, it does raise questions about whether the essential invalidation is actual invalidation by the parents, or perceived invalidation by their children. Furthermore, it is difficult to discern whether parents are able to accurately report their own invalidation. The support of a link between invalidation and the development of difficulties in emotion regulation specifically, and psychopathology in general, remains less than conclusive. However, the theory and findings encourage continued investigations regarding the relationship between invalidation and psychopathology, and perhaps some of the components of the diagnosis of BPD in particular, especially investigations which do not rely wholly upon self-reported or recalled invalidation.

1.2 Experiential Avoidance

What could be driving parents' invalidation of their children's emotions? It is doubtful that many parents who invalidate consciously intend to ignore, minimize and belittle their children's emotional experiences. Cultural expectations regarding the appropriateness of children expressing negative emotions could be a factor; however, if this were the only culprit, it would seem that the majority of parents would invalidate their children's emotions regularly. Linehan's (2003) biosocial theory of the development of BPD is a transactional one, one implication of this being it allows that an individual's emotional vulnerabilities and dysregulation could increase the chances of the occurrence of an invalidating environment. This suggests that children who are

emotionally intense and chronically dysregulated could influence their parents to be more invalidating. However, it is also possible that factors within the parents themselves influence their willingness or ability to endure their children's negative emotions without acting to end or minimize those emotions. It is plausible that parents experience negative emotions in response to witnessing negative emotions in their children, and are trying to avoid experiencing their own negative emotional responses. This response would align with experiential avoidance (EA). Hayes, Wilson, Gifford, Follette & Strosahl (1996) have defined EA as "the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral predispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them" (p. 1154). Although some EA may be an adaptive coping strategy, as in the case of distraction techniques to temporarily cope with emotions caused by uncontrollable situations (as in Linehan, 1993), a long-term pattern of EA is hypothesized to limit healthy experiences of psychological phenomena and to limit an individual's access to important internal and self-referent information provided by emotions (Hayes, 1996). EA is hypothesized to be a pervasive process within many forms of psychological distress including depression, anxiety, social phobia, agoraphobia, non-suicidal self-injury, trauma symptoms, and trauma beliefs (Armey & Crowther, 2008; Hayes, et al., 2004; Tull, Gratz, Salters & Roemer, 2004), and with psychopathological syndromes as

diverse as substance abuse and dependence, obsessive-compulsive disorder, and BPD (Hayes, et al., 1996). Indeed, it has been found that in comparison to normal controls, individuals with anxiety and mood disorders were significantly more likely to both judge their negative emotions as unacceptable and to suppress their emotions during a laboratory emotion-induction task, and higher levels of suppression were associated with increased negative emotion during the post-task recovery period (Campbell-Sills, Barlow, Brown & Hofmann, 2006). Acceptance is the opposite of EA: accepting the circumstances which are perceived to cause negative emotions, and choosing to tolerate and experience those circumstances and the resulting internal experiences without struggling against them (Hayes, et al., 1996).

1.2.1 Parental Experiential Avoidance and Child Psychopathology

The construct of EA can be extended to describe the orientation of parents who are consistently unwilling to remain in contact with the negative internal experiences which result from witnessing their children's negative emotions, and who act to stop their children's negative emotions in order to avoid those experiences. In this case, the EA is no longer focused only on an individual's (the parent's) internal experiences, but those experiences in reference to the internal experiences of another (the child) (Cheron, Ehrenreich & Pincus, 2009), and thus parental EA (PEA) is a construct thought to be distinct from EA. Although the construct of PEA is a new one, some evidence supports its operation in ineffective parenting behaviors, particularly in parents of children with

anxiety. Parents of children with anxiety disorders have been found to hold more negative expectations of their children's ability to cope with anxiety provoking situations than parents of non-anxious children (Kortlander, Kendall & Panichelli-Mindell, 1997), which may imply that the fear of a child's distress elicits negative emotions in parents, as well as driving controlling, intrusive, or overprotective parent behaviors which have been found in parents of anxious children (Tiwari, Podell, Martin, Mychailyszyn, Furr, & Kendall, 2008). However, despite theoretical support for the operation of PEA and possible connections with child psychopathology, empirical investigations are still quite few. The Parental Acceptance and Avoidance Questionnaire (PAAQ), a parental self-report measure of PEA, has been recently developed (Cheron, et al., 2009). It has yet to be seen whether PEA is specifically associated with parents of anxious children, or if it exists more generally as a pattern common to parents of children with more varied symptoms of psychopathology (Tiwari, et al., 2008). Furthermore, it is possible that EA is transmitted from parent to child, perhaps through modeling, providing another potential pathway for transmission of psychopathology (Tiwari, et al., 2008). This association has not yet been investigated.

1.2.2 Parental Experiential Avoidance and Invalidation: A Theoretical Model

Given that PEA is parents' desire to end or manage their children's negative emotions in order to attain relief from their own reactions to their children's negative emotions, a model is proposed in which PEA is the internal experience which motivates

a parent to invalidate his/her child's emotions, and the subsequent effect of the invalidation is to impact the ability of the child to regulate his/her emotions. Said differently, it is a model in which invalidation is the behavior which mediates the association between the internal experience of PEA and later child symptoms of emotion dysregulation. Testing this model would be a logical next step following from the extant literature on invalidation, EA, and the development of emotion regulation. In order to address methodological weaknesses in previous investigations, both observational and self-report measures of invalidation were utilized, in addition to employing a newly developed measure of PEA.

1.3 Purpose

The purpose of this pilot investigation is to provide an opportunity to explore the available data applicable to the proposed research questions, as well as to examine the methods employed to determine whether they are both appropriate and informative in the context of those patterns.

2. Method

2.1 Participants

Adolescents aged 12 to 18 years old and one of their primary caregivers were recruited from outpatient mental health clinics and the community from November 2010 through March 2012 in Durham, NC, and from December 2011 through March 2012 in Asheville, NC. Brochures, flyers, classified ads and Craigslist postings were used for advertisement. Dyads who entered the study before December 6, 2012, received \$25 in appreciation of their participation; those who entered after received \$40. All parent-adolescent dyads who attended the study visit completed all study procedures (N = 19). Two dyads were excluded from select analyses because the adolescent in each was the sibling of another adolescent in the study and was participating with the same parent, leaving a final sample of 17 adolescent-parent dyads available for all analyses. Demographic and diagnostic characteristics of participants are reported in Table 1.

2.2 Measures

2.2.1 Child Individual Assessments

Child participants completed individual assessments which included: (1) the psychosis screening portion of the Schedule for Affective Disorders and Schizophrenia for School Aged Children – Present and Lifetime Version (K-SADS-PL) to assess exclusion criteria, (2) the Youth Self-Report (YSR) to assess psychological symptoms and behaviors, (3) the Suicidal Ideation Questionnaire - JR (SIQ-JR)

Table 1: Participant Characteristics

Variable	Mean (SD)	Number	% of Sample
Adolescent age, years	14.89 (2.16)	19	
Adolescent sex			
Female		9	47.4
Male		10	52.6
Adolescent ethnicity			
African American		2	10.5
Biracial/Multiracial		3	15.8
European American		12	63.2
Hispanic		1	5.3
Probable DSM diagnosis groups represented in adolescent sample (per CBCL by parent)*			
Affective		5	26.3
Anxiety		3	15.8
Somatic		1	5.3
Attention Deficit/Hyperactivity		2	10.5
Oppositional Defiant		1	5.3
Number of diagnoses per adolescent	0.63 (0.89)		
Adolescents with one previous mental health hospitalization		4	21.1
Relationship of parent/guardian			
Biological mother		18	94.7
Adoptive mother		1	5.3
Parent age, years	47.12 (7.45)	17	
Parent BAI score			
Below mild range (0 – 7)		15	88.2
Mild range (8 – 15)		0	0
Moderate to severe range (16 – 63)		2	11.8
Parent BDI score			
Below mild range (0 – 13)		11	64.7
Mild range (14 – 19)		4	23.5
Moderate to severe range (20 – 63)		2	11.8

*Note: Number of diagnoses in each category reflects the number of children who were rated in the clinical range for that category. Had borderline ranges been used, the numbers would have increased as follows: Affective – 9 (47.4%), Anxiety – 5 (26.3%), Somatic – 1 (5.3%), ADHD – 3 (15.8%), Oppositional Defiant – 5 (26.3%), Conduct – 4 (21.1%). Diagnoses per adolescent: 1.42 (SD = 1.39).

to assess suicidal ideation, (4) a portion of the Self-Injurious Thoughts and Behaviors

Interview (SITBI) to assess non-suicidal self-injury thoughts and behaviors, (5) the

Avoidance and Fusion Questionnaire for Youth (AFQ-Y) to assess EA, and (6) the Socialization of Emotion Scale (SES) to assess the child's perceptions of his/her parents' invalidation of his/her emotions. Parents were asked to provide responses to the Child Behavior Checklist (CBCL) regarding their child's behavior.

2.2.1.1 K-SADS-PL

The K-SADS-PL is a semi-structured diagnostic interview which in its totality assesses current and past episodes of 33 psychiatric disorders according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision (DSM-IV-TR;* American Psychiatric Association, 2000). It has demonstrated solid psychometric properties, with interrater reliability averaging 99.7% agreement on skip out criteria and 98% on diagnoses; test-retest reliability across present and past diagnoses ranging from excellent to good ($\kappa = 1.00 - 0.60$), and well-supported concurrent validity across diagnoses (Kaufman, Birmaher, Brent, Rao & Flynn, 1997). Only the portion regarding symptoms of psychosis was utilized for this investigation, and it was presented as a series of yes/no and open-ended self-report items within the larger battery of questionnaires.

2.2.1.2 CBCL and YSR

The CBCL and YSR are widely used 120-item parent and self-report measures, respectively, of a child's behavioral and emotional function. They both contain an Internalizing subscale which can be further subdivided into the Anxious/Depressed,

Withdrawn/Depressed, and Somatic Complaints subscales; and the Externalizing subscale, which is divided into the Rule Breaking Behavior and Aggressive Behavior subscales. The Internalizing and Externalizing subscales are combined with the Social Problems, Thought Problems, Attention Problems, and Other Problems subscales to attain the total scale score. Additional DSM-oriented scales assessing Affective Problems, Anxiety Problems, Somatic Problems, Attention Defecit/Hyperactivity Problems, Oppositional Defiant Problems, and Conduct Problems are also generated. Internal consistency has been found to range between $\alpha = .78$ to $\alpha = .97$ across scales and test-retest reliability has been found to range between $r_{\alpha} = .95$ to $r_{\alpha} = 1.00$ across scales. Criterion, content, and construct validity have also been found to be acceptable in multiple investigations (Achenbach & Rescorla, 2001). DSM-oriented scales were used to characterize adolescent participants as a group; internalizing, externalizing, and total problem scales were used as primary self-and parent reported measures of adolescent symptoms of psychopathology.

2.2.1.3 SIQ-JR

The SIQ-JR (Reynolds, 1987) is a 15-item self-report measure which evaluates the frequency of suicidal cognitions in the past month. It is scored on a 7 point Likert-type scale ranging from 0 (I never had this thought) to 6 (almost every day). Internal reliability has been found to be high in both predominantly Caucasian child and adolescent samples ($\alpha = 0.94$; Reynolds, 1988) and in predominantly African American

and Hispanic urban youth ($\alpha = 0.91$, Reynolds & Mazza, 1997). Test-retest reliability was found to be good ($r_\alpha = .89$) and the SIQ-JR was significantly correlated with a semi-structured clinical interview measure (the Suicidal Behavior Interview), demonstrating good criterion validity (Reynolds & Mazza, 1997).

2.2.1.4 SITBI

The SITBI (Nock, Holmberg, Photos & Michel, 2007) is a structured interview which gathers both continuous quantitative and qualitative data regarding the presence, frequency, and characteristics of self-injurious thoughts and behaviors. The entire SITBI consists of 6 modules (Suicidal Ideation, Suicide Plan, Suicide Gesture, Suicide Attempt, Thoughts of Non-Suicidal Self-Injury, and Non-Suicidal Self-Injury) administered orally by a clinical interviewer, and administration is estimated to take between 3 and 35 minutes. Questions in each section assess presence or absence of behavior or cognitions fitting the category, frequency, duration, methods/content, and other information. The developers of the measure (Nock, et al., 2007) found it to have a high level of interrater reliability (average $\kappa = .99$), but low test-retest reliability ($ICC = .44$). They found significant correlation between the SITBI and existing measures of suicidal ideation and attempts, as well as assessments of non-suicidal self-injury. Only the Thoughts of Non-Suicidal Self-Injury and Non-Suicidal Self-Injury sections were utilized in this investigation, presented as a series of yes/no and open-ended self-report items within the larger battery of questionnaires.

2.2.1.5 AFQ-Y

The AFQ-Y (Greco, Lambert & Baer, 2008) is a relatively new, 17-item self-report measure of psychological inflexibility for youths as young as 8 years of age. Psychological inflexibility is conceptualized as the opposite of psychological acceptance, and is composed of both experiential avoidance, and the cognitive fusion which gives rise to experiential avoidance. Statements such as “If I feel sad or afraid, then something must be wrong with me” and “I wish I could wave a magic wand to make all my sadness go away” are rated by respondents as to how true they feel each is for them on a 5-level Likert-type scale scaled from 0 (Not at all true) to 4 (Very true). The authors of the AFQ-Y found it to have adequate internal reliability ($\alpha = .90$) and it correlated significantly with measures of anxiety and negative behavior, and quality of life in the expected directions, supporting acceptable criterion validity (Greco, Lambert & Baer, 2008); however, test-retest reliability and psychometric properties with groups outside of middle- to lower-middle income Caucasian youths have not yet been reported.

2.2.1.6 SES

The SES (Krause, Mendelson & Lynch, 2003) is a 36-item self-report measure which was adapted from the CCNES to assess individuals’ perceptions of their parents’ reactions to their emotions. Respondents rank statements regarding parental responses to 12 common scenarios which would likely happen to a young (toddler to young school-aged) children on a scale of 1 (“very unlikely”) to 7 (very likely) according to the

likelihood his/her parent would have employed each response when the child was younger. Note that because the time frame of reference, the children and adolescents in this study were asked to recall their parent's response when they were younger. Three possible parental responses are rated for each scenario, generating three 12-item subscales representing (1) Parent Distress: the extent to which a parent seemed to experience distress when the child expressed negative affect, (2) Parent Punish: the extent to which a parent seemed to punish the child in order to stop the expression of negative emotions, and (3) Parent Minimize: the degree to which a parent seemed to minimize or devalue a child's expression of distress. Internal consistency was found to be good for each subscale ($\alpha = .85$, $\alpha = .80$, $\alpha = .78$, respectively), but no test-retest reliability was assessed (Krause, et al., 2003). The three subscales are thought to represent three facets of parental invalidation of children's emotions. A total invalidation score was also computed by adding the scores from each subscale.

2.2.2 Parent Individual Assessments

Parent participants were asked to complete individual assessments which included: (1) the Beck Anxiety Inventory (BAI) to assess symptoms of anxiety, (2) the Beck Depression Inventory (BDI-II) to assess symptoms of depression, (3) the Acceptance and Action Questionnaire (AAQ) to assess EA, (4) the Parental Acceptance and Action Questionnaire (PAAQ) to assess parental experiential avoidance, and (5) the Coping

with Children's Negative Emotions Scale (CCNES) to assess the parent's validation and invalidation of his/her child's emotions.

2.2.2.1 BAI

The BAI (Beck, Epstein, Brown & Steer, 1988) is a widely used self-report measure which consists of 21 items rated on a scale of 0 to 3 in terms of intensity and/or severity of anxiety indicated, and is scored by summing the ratings for each item. The BAI has demonstrated adequate internal consistency ($\alpha = 0.92$) (Beck et al., 1988; also Steer, Ranieri, Beck & Clark, 1993). Beck et al. (1988) also found the scale to have adequate test-retest reliability ($r = 0.75$) and to discriminate between anxious and non-anxious diagnostic groups.

2.2.2.2 BDI-II

The BDI-II (Beck, Ward, Mendelson, Mock & Erbaugh, 1961) is a widely used instrument consisting of 21 items rated on a Likert scale of 0 to 3 in terms of intensity and/or severity of depression indicated, which is scored by summing the ratings for each item. Beck, Steer & Garbin (1988) conducted a meta-analysis which found that reliability was adequate for both clinical and non-clinical samples ($\alpha = 0.86$ and $\alpha = 0.81$, respectively). They also reported that BDI-II scores were significantly correlated with the Hamilton Psychiatric Rating Scale for Depression (HRSD) for both samples.

2.2.2.3 AAQ

The AAQ (Hayes, et al., 2004) is a 9-item instrument which is rated by respondents on a 7 point Likert scale. The items correspond to the theoretical components of EA, such as cognitive fusion, negative evaluations of private experiences, inability to take action in the face of strong emotion, and high need for emotional and cognitive control (Hayes, et al., 2004). The AAQ was found to correlate significantly with a wide range of measures of psychopathology in a moderately large sample ($n = 294$, Hayes, et al., 2004). Test- retest reliability was found to be relatively low over a four month period ($r_{\alpha} = .64$) in the large sample used for initial measure testing, however it is argued by Hayes, et al. (1994) that this may be consistent with the view of EA as more contextually influenced than a psychological trait.

2.2.2.4 PAAQ

The PAAQ (Cheron, Ehrenreich & Pincus, 2009) is a 19-item self-report questionnaire in which parents rate statements on a seven-point Likert-type scale from 1 (“never true”) to 7 (“always true”). The total summed score of all items represents the parent’s endorsed level of PEA. Two subscales of the PAAQ measure (1) the parent’s unwillingness to witness negative emotional experience in his/her child and (Unwillingness Subscale) and (2) the parent’s difficulty managing his/her own reactions to the child’s affect (Inaction Subscale). Internal consistency was found by the developers of the scale (Cheron, et al., 2009) to be fair ($\alpha = .64 - .65$) across subscales and

test-retest reliability was found to be moderate ($r = .68 - .74$). Criterion validity was supported by significant correlations with measures of parental locus of control, parental affective expression, and controlling parental behaviors.

2.2.2.5 CCNES

The CCNES (Fabes, Eisenberg & Bernzweig, 1990) consists of twelve vignettes in which the parent's young (toddler to early school-aged) child feels upset. Note that because the children of the parents in this investigation are older than the referred time frame, parents were asked to recall the reactions they would have had when their child in the study was a toddler to early school-aged. Six possible responses are provided to the scenario, with the respondent asked to rate the likelihood they would have used each response on a 7-point Likert-type scale ranging from 1 ("very unlikely") to 7 ("very likely") generating six 12-item subscales which assess 6 separate parental coping responses to a child's negative emotions: (1) Problem-Focused Reactions (PFR), the degree to which parents attempt to help the child solve the problem that caused the child's distress, (2) Emotion-Focused Reactions (EFR), the degree to which parents respond with strategies to help the child feel better, (3) Expressive Encouragement (EE), the degree to which a parent actively encourages the child's expression of negative emotions, (4) Minimization Reactions (MR), the degree to which a parent discounts the seriousness of a child's emotional reaction or distressed response or devalues the problem, (5) Punitive Reactions (PR), the degree to which a parent uses verbal or

physical punishment to control a child's negative emotional display and (6) Distress Reactions (DR), the degree to which a parent expresses distress in response to the child's negative emotions. The internal reliability for the subscales of the CCNES was found to be acceptable ($\alpha = .69 - .85$) and test-retest reliability after four months ranged from $r = .56$ to $r = .83$ and all were significant (Fabes, Poulin, Eisenberg & Madden-Derdich, 2002). The CCNES was also found to have good construct validity, with significant associations with in the theoretically expectable directions between the appropriate subscales and previous measures of parent interpersonal reactivity, parent anger, and parental control (Fabes, et al., 2002).

2.2.3 Family Assessments

Adolescents and their parents were asked to participate in a Parent-Child Emotion Interaction Task (PCEIT; Shipman, Schneider, Fitzgerald, Sims, Swisher & Edwards, 2007) during which the adolescents were asked to engage with their parent in three separate discussions recalling a time when the adolescent experienced (1) worry or fear, (2) sadness, and (3) anger. Parent-adolescent dyads were asked to talk for at least 1 minute, and no more than 5 minutes about each emotion. Parents were asked to talk about the situation as if their child were telling them about this situation on a typical day. These videotaped interactions were then coded according to the Parent-Child Validating and Invalidating Behavior Coding System (P-CVIBCS; Schneider & Fruzzetti, 2002).

2.2.3.1 P-CVIBCS

The P-CVIBCS is an observational rating scale in which coders rate parents' validation and invalidation of their children's emotions (Schneider & Fruzzetti, 2002). In each interaction task, the parent is given a separate validation and invalidation score ranging from one to seven, with seven being the score indicating the highest level (most pronounced, most obvious or having the strongest effect) of validation or invalidation. Validating behaviors include behaviors which show interest in the child's experience, or empathy, as well as behaviors that help children to effectively cope with their emotions. Invalidating behaviors include responses that function to minimize or dismiss a child's negative emotions, punish emotional disclosure, or blame or criticize the child for his/her emotional experience. The P-CVIBCS is a global coding scale which takes into account both frequency and intensity of behavior and both verbal and non-verbal behavioral cues. It also takes into account the function of parent behaviors, and child verbal and nonverbal responses to the parent can be evidence for scoring choices. The P-CVIBCS has previously been found to have acceptable interrater reliability (ICC = .82 - .93) (Shipman, Schneider, Fitzgerald, Sims, Swisher & Edwards, 2007).

Separate P-CVIBCS scores of validation and invalidation were obtained for parent responses to child worry/fear, sadness, and anger, respectively. Index scores were created by adding scores across all three emotion tasks for both validation and invalidation. Coding was performed by two coders who were blind to self-report

assessment scores of both children and parents at the time discussions were coded. Interrater reliability for this study was calculated by emotion type on 37% of interactions using a two-way mixed effects model of intra-class correlation coefficients and indicated excellent levels of agreement (validation, ICC = .96; invalidation, ICC range = .94 - .96). It was found that dyads discussed each prompt for an average of 4.27 minutes.

2.3 Procedure

All recruitment methods and study procedures were approved by the Duke University Medical Center Institutional Review Board. Potential participants were screened by telephone to confirm that the adolescent was currently in treatment with a mental health care provider and that the parent (or adolescent, in the case of 18 year-olds) was willing to grant a release of information to the adolescent's mental health care provider in the case that the adolescent reported current and imminent suicidal, self-harming, or homicidal thoughts. Participant dyads who fulfilled these criteria were invited to study offices for a study visit.

Data were collected from each dyad during a single visit lasting approximately 2 hours. After participant arrival, study staff reviewed study procedures with both members of the dyad, and participants provided written informed consent to participate in the research, with parental consent required for those younger than 18 years. Participants younger than 18 years provided written assent for participation. Parents or 18 year-old adolescents also provided written release of information to the adolescent's

mental health care provider at this time. Parents and adolescents then completed study questionnaires in a computer-based format on terminals in the same room. It was requested of parents and adolescents that they not discuss or confer about questionnaire items. A single dyad completed study questionnaires via internet at home within 6 hours of their study visit due to schedule constraints.

After completion of study questionnaires, adolescents and their parents were asked to engage in 3 videotaped interactions (PCEIT, as described in Measures) in a private therapy room with a video recording system. Both members of the dyad were then asked to indicate to what extent they believed their discussions were representative of their normal discussions via a question and choices on paper (see Appendix A for parent example), and were provided compensation before exiting study offices.

2.4 Data Analyses

The primary method of data analysis for these data was graphical examination due to the small size of the sample and the exploratory nature of a pilot study. All correlations were assessed with Pearson's correlations, and tests of significance were two-tailed. When correlations were calculated, sibling dyads (104 and 117) were removed from the sample to avoid violations of independence of observations, and were noted as necessary. Dyads 104 and 117 were selected for exclusion on an a priori basis because they were each the second of the siblings to participate in the study, and it was hypothesized that the participating parent could have been influenced in an

undetermined manner by his/her previous participation. Both graphical and correlational analyses were performed within IBM SPSS Statistics, version 20.

Descriptive statistics of measures used in the following analyses are presented in Table 2 and include data from all participants.

Table 2: Descriptive statistics of primary measures

Variable	Mean (SD)	Min	Max	SEM
Measures of Child Psychopathology				
Parent reported, t scores				
CBCL-IntPr (Internalizing Problems)	59.53 (11.57)	33	80	4.91
CBCL-ExtPr (Externalizing Problems)	56.37 (9.13)	40	70	2.74
CBCL-TotPr (Total Problems)	59.05 (8.50)	45	73	2.69
Adolescent reported, t scores				
YSR-IntPr (Internalizing Problems)	55.84 (10.55)	38	73	2.11
YSR-ExtPr (Externalizing Problems)	54.89 (8.36)	42	70	2.77
YSR-TotPr (Total Problems)	56.16 (6.57)	42	67	1.97
Adolescent reported suicidality, NSSI				
SIQ (Suicidality)	21.00 (7.17)	14	42	2.03
SITBI#13 (# of NSSI episodes, lifetime)	11 (13.08)	1	30	1.31*
Measures of Parental Invalidation				
Parent reported				
CCNES-MR	2.93 (0.59)	1.75	4.08	0.28
CCNES-DR	3.18 (0.60)	2.17	4.17	0.33
CCNES-PR	2.75 (0.79)	1.25	4.83	0.44
CCNES-IV	8.86 (1.50)	6.33	11.75	
Adolescent reported				
SES-MR	2.79 (1.06)	1.08	4.67	0.50
SES-DR	2.71 (0.89)	1.50	4.25	0.34
SES-PR	2.26 (1.15)	1.08	6.00	0.51
SES-IV	7.77 (2.72)	4.25	13.83	
Observationally coded				
P-CVIBCS	14.00 (4.20)	3	20	1.51
Measures of Experiential Avoidance				
PAAQ (Parental Experiential Avoidance, PEA)	68.47 (11.95)	49	87	7.17
AAQ (Experiential Avoidance in Parent, EA)	33.16 (9.69)	17	51	5.81**
AFQ-Y (Experiential Avoidance in Adolescent, EA)	20.63 (14.04)	0	47	4.44

Note: Standard Error of Measurement (SEM) estimated using Cronbach's α , except in the case of * = interrater reliability (κ) and ** = test-retest reliability (r_{α}).

3. Results

3.1 Feasibility and Acceptability

3.1.1 Implementability

This investigation was found to be relatively easy to implement in terms of both procedures and necessary resources, particularly after initial setup. Procedurally, web-based questionnaires in particular were found to be advantageous. After the investment of time required to design and input questionnaire measures into this format, they were available to study staff without any preparation such as making paper copies, and paper was conserved. As responses were entered directly into a database by participants, no further data entry was required. Furthermore, it was possible to restrict questions in the computer-based version such that reminders would appear if a question had been skipped, and the participant would not be allowed to proceed to later questions without providing a response, greatly reducing missing data issues. Electronic data were only linked to participant number and instantly password protected due to the system provided by the internet survey company (www.SurveyMonkey.com in this case), supporting efforts to protect confidentiality. It was not necessary to organize and file paper copies, minimizing the storage space needed for study materials and making it possible for study staff to access collected data at any time, from anywhere.

Although other study procedures seemed to be reproduced reliably by different members of study staff, it was discovered that prompts for videotaped discussions, if

not delivered verbatim, could be unclear for participants and change the content of discussions. For example, not including the word “situation” and only using the word “time” in the discussion prompt tended to elicit discussions about larger time frames in an adolescent’s life, rather than a particular incident.

Resources necessary to carry out study procedures were found to be reasonably low. A single room with two computer terminals equipped with internet access and a video camera were the hard equipment required. Study staff interacted with participants for 10 to 15 minutes when the dyads arrived, checked on participants several times during the 1 to 1.5 hours needed to respond to questionnaires, and monitored videotaping and final paperwork for the last 15 to 20 minutes of the visit. It was possible for a single staff member to conduct study visits with multiple dyads by offsetting the timing of visits by 30 minutes and having other rooms and sets of computers available.

3.1.2 Acceptability

No dyads terminated participation in the study before completing the single study visit, and when informally asked about their overall experiences, gave neutral to positive responses. No parent or adolescent reported having a negative experience, other than becoming bored during the time spent responding to questionnaires. Despite worries that were shared by several parents that their adolescent would not be able or willing to answer all questionnaires due to lack of attention or learning disabilities, only

one adolescent took appreciably longer than the others to answer questionnaires and complained about the time it took (approximately 1.5 hours). The participant's parent later revealed that the 12 year old had previously been assessed to have below grade-level reading competency.

3.1.3 Recruitment

Recruitment was the most apparent obstacle for this investigation. During 17 months of recruitment activity, 19 dyads participated in the study (see Figure 1 for participant flow). In Durham, NC, flyers and brochures were distributed widely throughout clinics and individual clinicians associated with Duke University Medical Center; including but not limited to the Duke Family Studies Program, ADHD Program, Pediatric Psychology, Program in Child Affective and Anxiety Disorders, Pediatric OCD Study, adolescent Dialectical Behavior Therapy program, Duke Psychiatry residents, Center for Child Development and Behavioral Health, Psychosocial Treatment Clinic, Behavioral Intervention Program, and Eating Disorders Program, with many individuals being contacted personally as a reminder on an ongoing basis. Flyers and brochures were also distributed through two private practices specializing in psychological and psychiatric treatment of children and adolescents in Durham, as well as in public spaces in Durham. Additionally, flyers and brochures were distributed by the psychology training clinic at UNC-Chapel Hill and through a UNC faculty listserv. These strategies

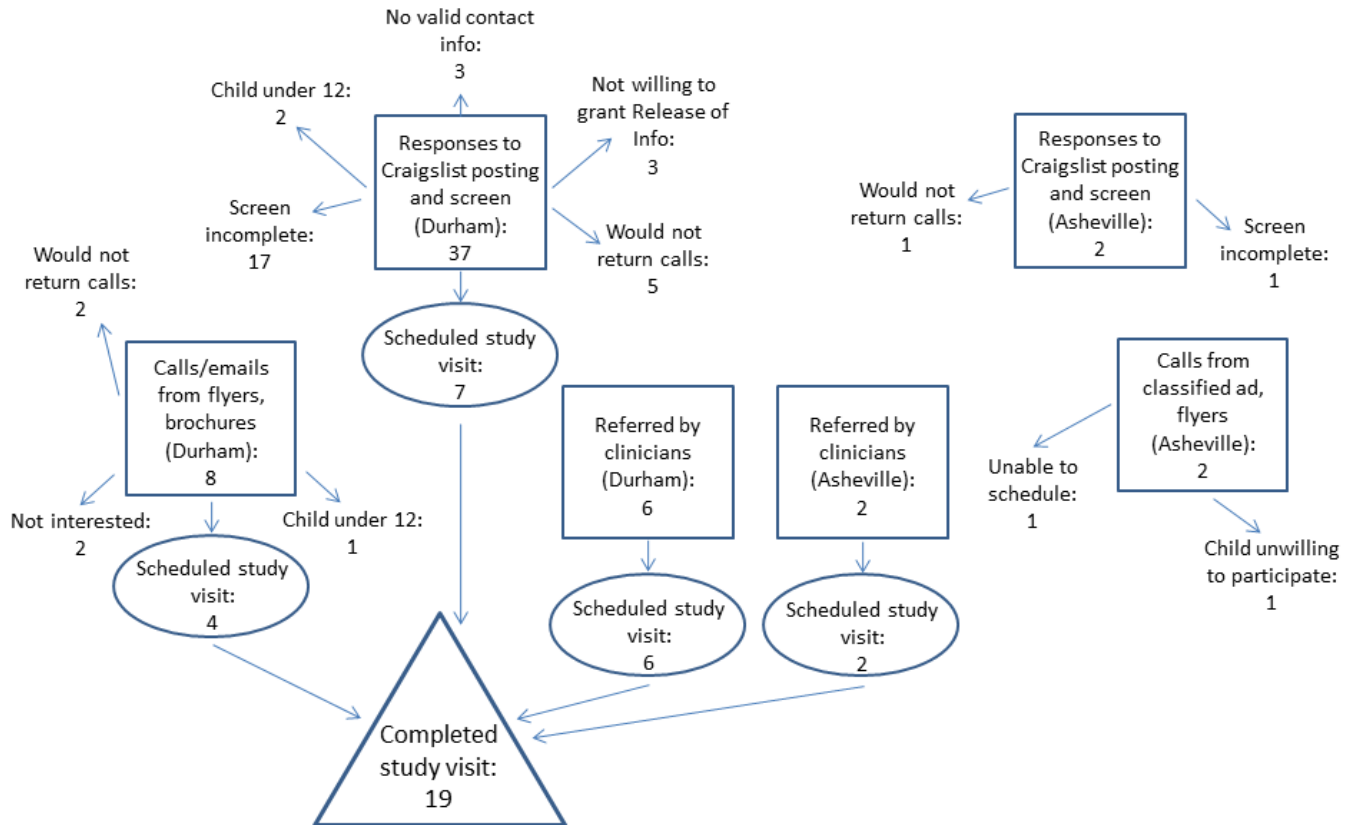


Figure 1: Participant recruitment flow

(direct response to materials, combined with clinician referrals) resulted in 10 dyads participating in the study.

A relatively successful recruitment strategy in the Durham area was an advertisement in the “Volunteers” section of the local Craigslist website. A link embedded in the ad directed interested web-surfers to a brief informed consent, then an online screening survey, which requested contact information be provided in order for study staff to contact interested potential participants. Although the proportion of participating dyads gained to total responses (7 out of 37) was lower than for other strategies, the majority of responses which did not lead to participating dyads were instances of the screening form being left blank after the individual indicated in the first question he or she would be interested in participating. It is hypothesized that this may have been at least partially due to lack of ease with providing contact information on a website, but this cannot be supported or refuted.

In Asheville, NC, where recruitment lasted for 3 months, flyers and brochures were available in two large private mental health clinics, and were distributed by a mental health practitioner listserv and licensed clinical social worker listserv. A classified ad was run in the print version of the local Asheville weekly independent newspaper and on its website for three weeks. A Craigslist ad identical to that run in the Durham area was placed in the “Volunteers” section of the Asheville area Craigslist

website. Two sibling dyads (a parent and his/her 2 adolescent children) participated in Asheville.

3.2 Examination of Measures

Multiple methods were employed to measure several of the constructs within this investigation, in part due to lack of evidence supporting one method or another as clearly more appropriate or informative, and to address possible methodological weaknesses in previous studies. In service of both enhancing the ability to interpret results of the present study and to provide a foundation for an effective larger study, several measures of the same or similar constructs were examined and compared.

3.2.1 Measures of Child Symptoms of Psychopathology

Symptoms of general types of child psychopathology as measured by Internalizing, Externalizing, and Total Problem subscales of the YSR (adolescent-reported) and CBCL (parent-reported) were compared graphically to examine correspondence of adolescent and parent reports (Figures 2, 3, 4). As the two scales utilize identical items and scales, with article changes made for parent respondents (CBCL) and child respondents (YSR), perfect and objective scoring on the part of both parties should theoretically produce a one-to-one association between a parent's CBCL scores and his/her child's YSR scores.

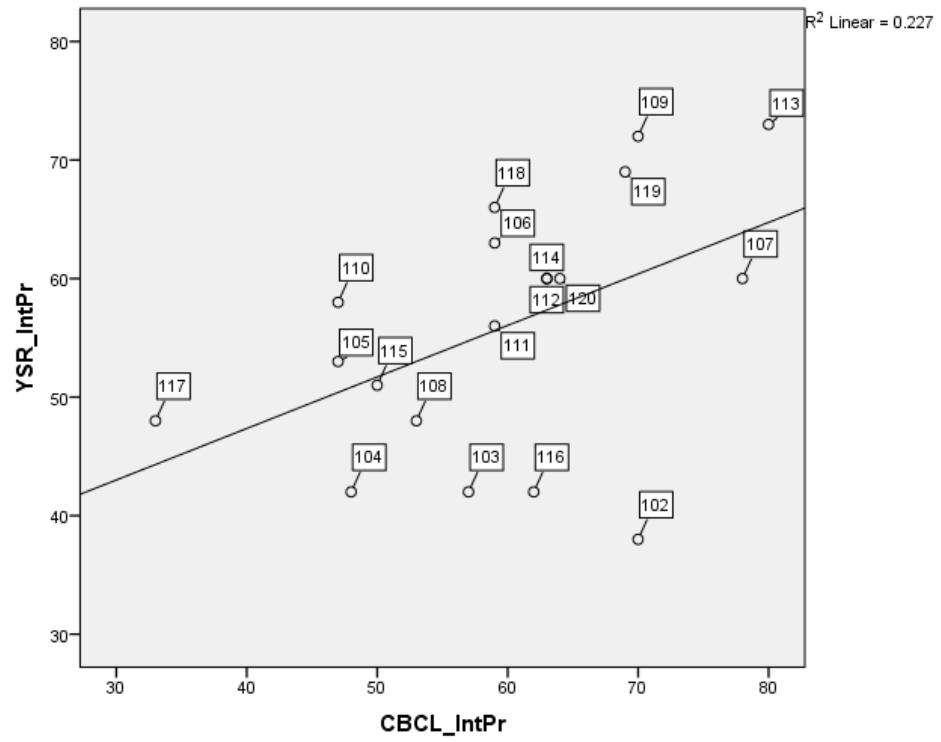


Figure 2: Comparison of adolescent and parent reports of internalizing symptoms

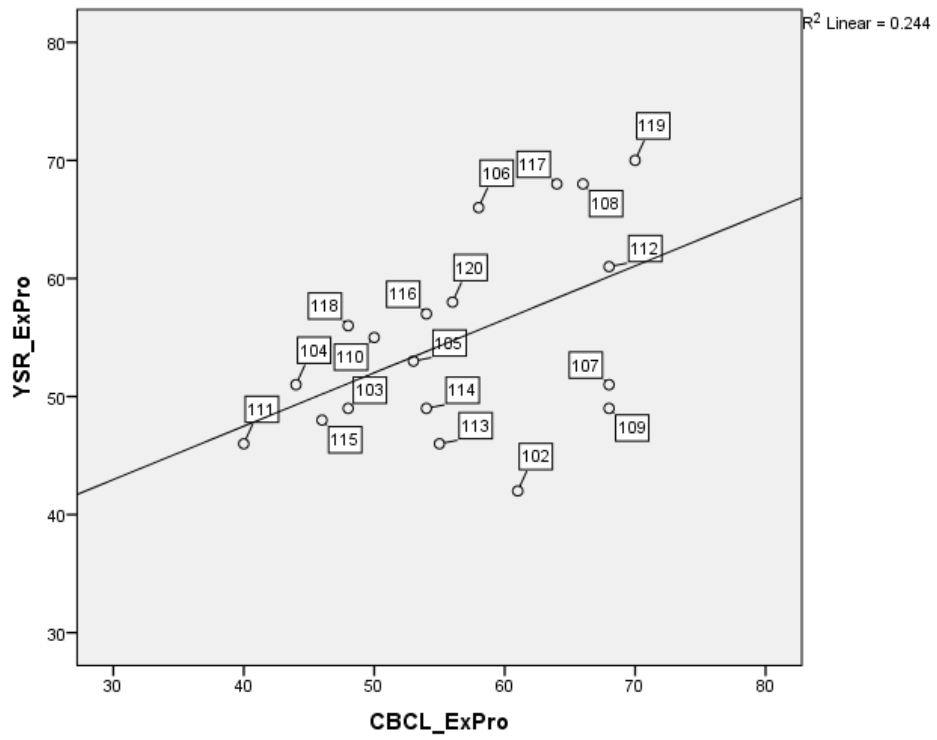


Figure 3: Comparison of adolescent and parent reports of externalizing symptoms

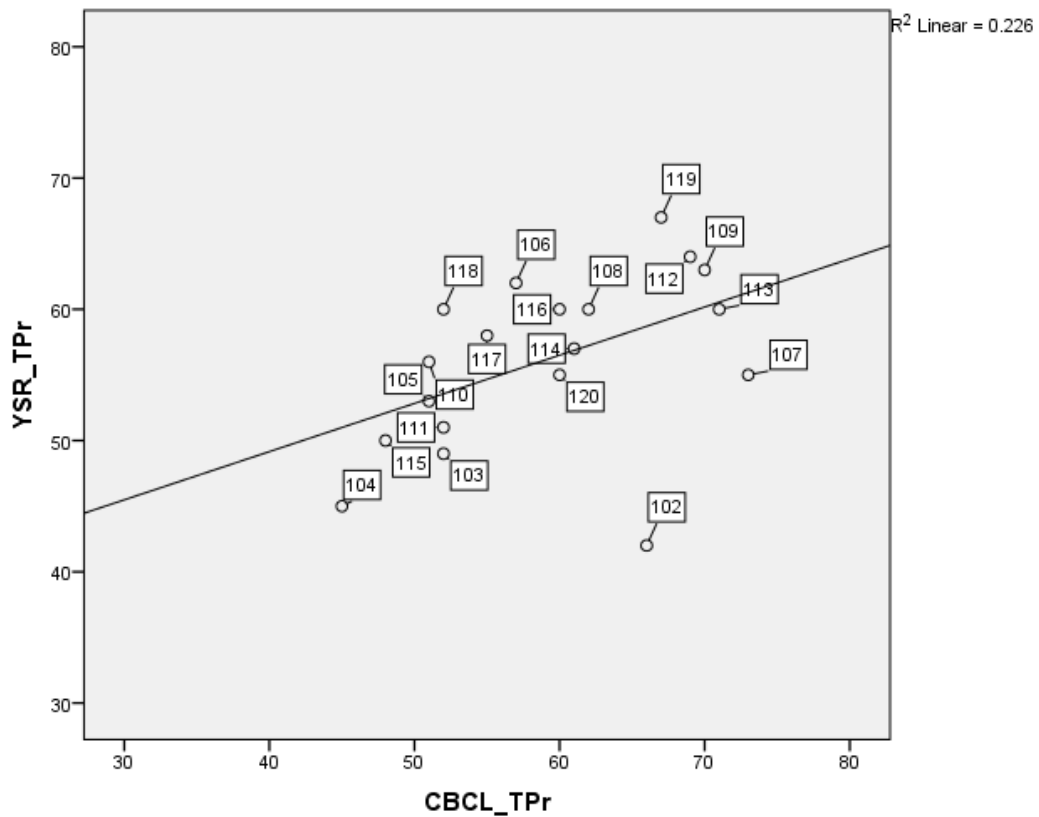


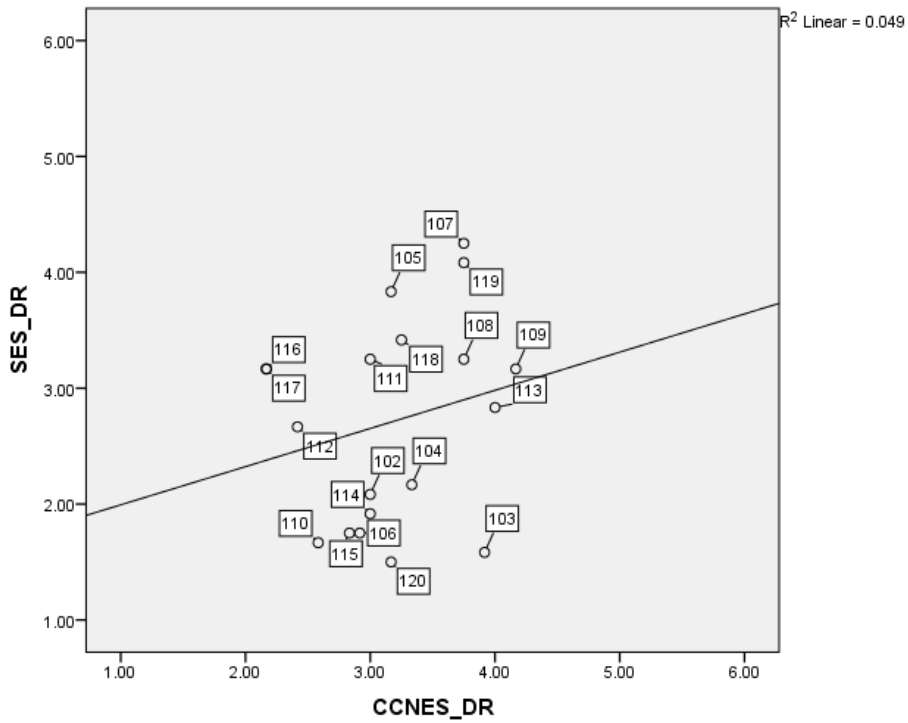
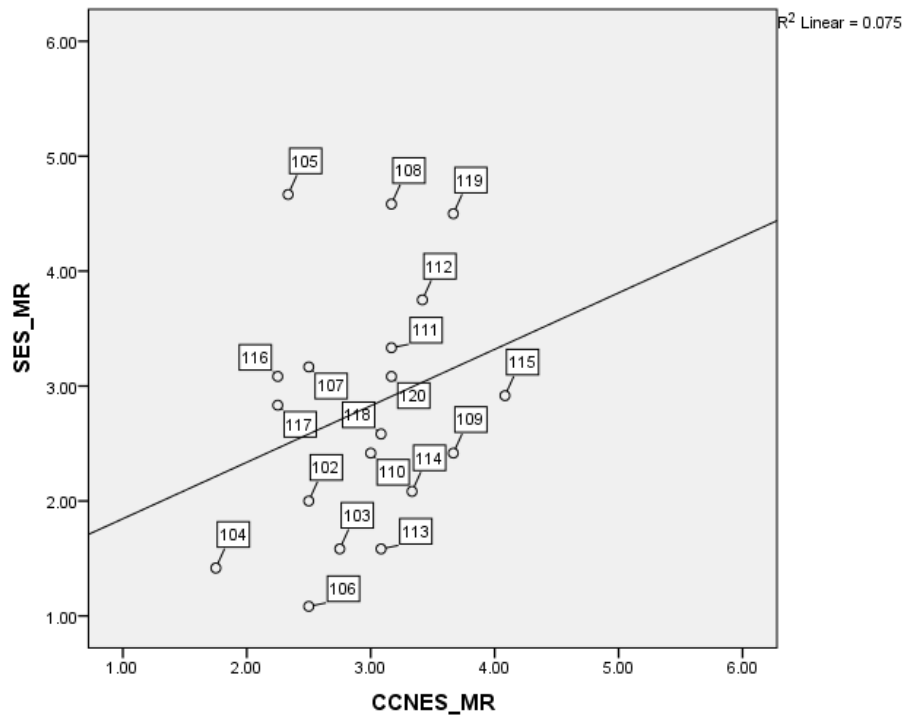
Figure 4: Comparison of adolescent and parent reports of total psychological symptoms

All three comparisons revealed associations in the expected direction, with reasonable correlations for internalizing symptoms ($r = .48, p = .04$), externalizing symptoms ($r = .49, p = .03$) and total problems ($r = .48, p = .04$). It was noted that in each of these comparisons dyad 102 was an exception, as the adolescent in this dyad seemed to appreciably underreport symptoms of each type as compared to his/her parent. Removing this data point from each comparison strengthened the observed patterns of association for all three scales: internalizing symptoms ($r = .64, p = .005$), externalizing symptoms ($r = .59, p = .01$), and total problems ($r = .69, p = .001$).

These data suggest that differences among parents' ratings of adolescents' symptoms corresponded fairly well with differences among the adolescents' ratings of their own symptoms of psychopathology.

3.2.2 Measures of Invalidation

The 3 components of parental invalidation evaluated by both the CCNES and SES – Distress Reaction (DR), Punitive Reaction (PR), and Minimization Reaction (MR) – were compared. As in the case of the CBCL and YSR in the previous section, the two scales utilize identical items and scales, with article changes made for parent respondents (CCNES) and child respondents (SES). In this case, perfect recall and report of past instances of parental invalidation on the part of both parties should theoretically produce a one-to-one association between a parent's CCNES scores and his/her child's SES scores.



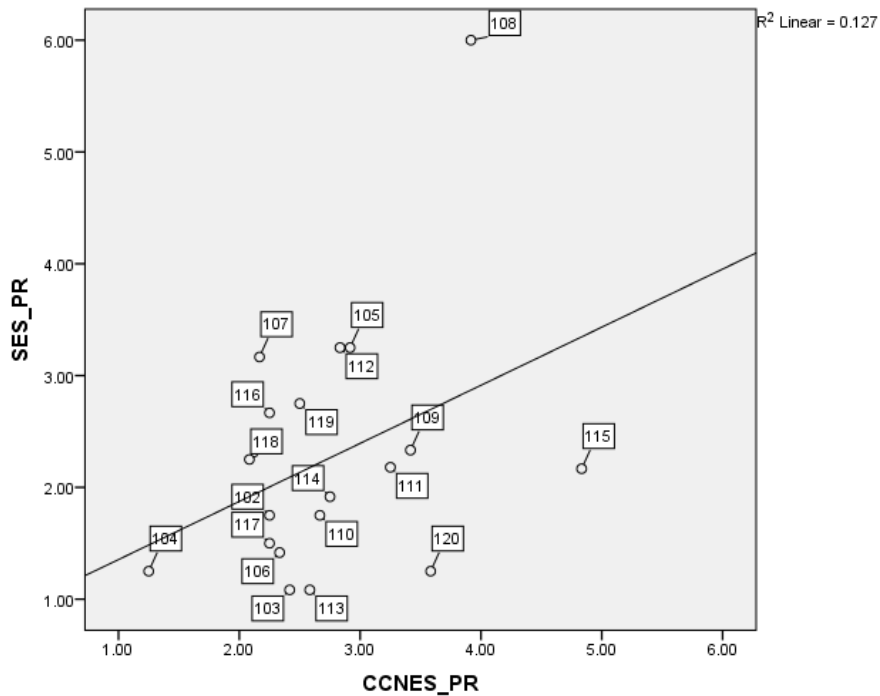


Figure 5: Comparisons of adolescent reported to parent reported parent invalidation

Single subscale comparisons did not show strong associations (Figure 5), but perhaps supported a trend in the expected direction. Correlations (siblings removed) were as follows: MR subscale ($r = .15$, $p = .56$), DR subscale ($r = .31$, $p = .22$), and PR subscale ($r = .27$, $p = .29$). It was noted that in 2 of the 3 comparisons, adolescents in dyads 105 (in MR and DR subscales) and 108 (in MR and PR subscales) reported comparatively more invalidation than their parents.

As it is possible that invalidation may be difficult to accurately recall as specific types of for parents and adolescents, and more general impressions of invalidation could bleed across categories, MR, DR, and PR subscores of the SES and CCNES were added

together for a total invalidation score, and then these combined SES and CCNES invalidation scores were compared.

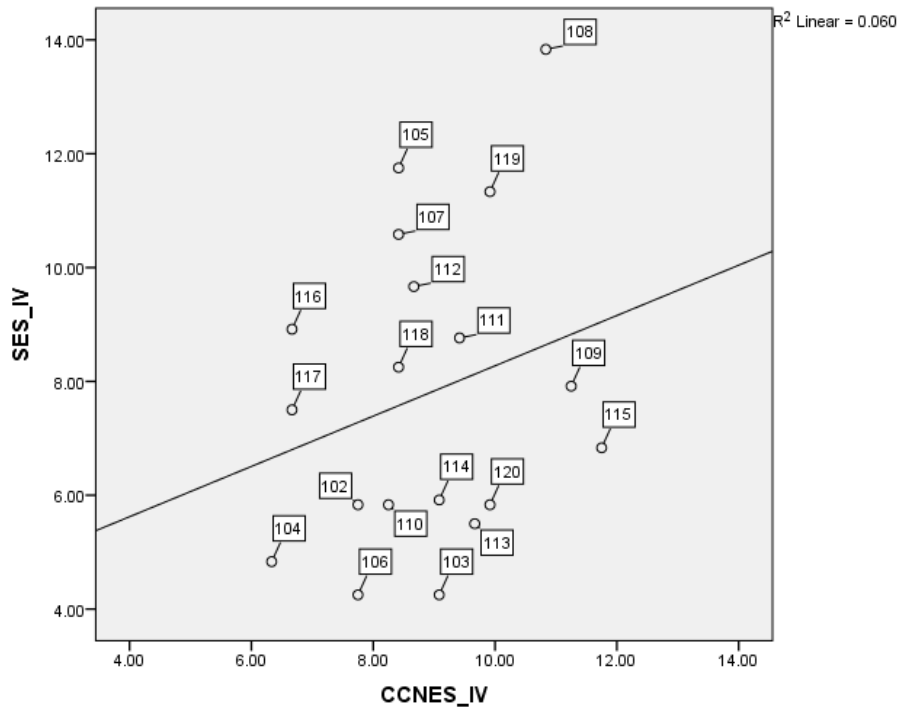


Figure 6: Comparison of total adolescent reported to parent reported invalidation scores

The association between SES and CCNES total invalidation scores (Figure 6)($r = .15$, $p = .56$; siblings removed) was not noticeably stronger than those observed between SES and CCNES subscales.

Based on the comparisons in this sample, parent reports of recalled invalidation behaviors do not seem to strongly correspond with adolescent reports of the invalidation they have experienced.

To further clarify patterns in parent-reported and child-reported measures of invalidation, the total self-reported invalidation scores of the SES and CCNES were

compared to the total invalidation score determined by observational coding (P-CVIBCS). Composite invalidation scores of self-report measures were chosen to compare to observationally coded overall invalidation scores - rather than subscales within each measure – because subscale types are not fully comparable between the two types of measures (i.e., both have minimization subscales, but a distress reaction is not coded as such in the P-CVIBCS).

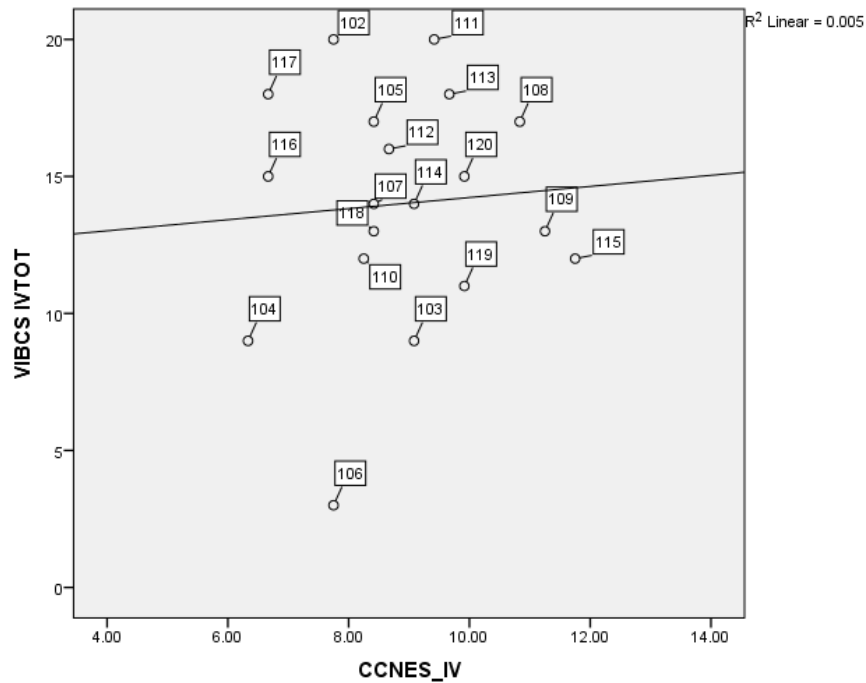


Figure 7: Parent reported total invalidation compared to observationally coded total invalidation

Comparison of parent reported CCNES scores to observationally coded invalidation did not demonstrate a strong association (Figure 7)($r = .05$, $p = .86$; siblings removed).

Additionally, directly after completing the videotaped discussions, the parents in dyads 102 and 104 reported that the discussions they had with their adolescents during their study visits were only “a little bit like”, or were “not much like” other conversations they had had with their children before, respectively. Indeed, both dyads are on the outer edges of the data cluster in the comparison of parent reported invalidation and observed invalidation. The data from dyad 102 indicates observationally coded invalidation was substantially greater in value than the parent’s estimation of past invalidating behaviors, as compared to the differences between observationally coded invalidation and parent recalled invalidating behavior in the sample. Observationally coded invalidation in dyad 104 appeared to be low compared to the sample at large, and the parent reported invalidation was low as well. All other parents indicated that the discussions were either “just like” or “somewhat like” conversations they have had with their adolescents before.

The comparison of adolescent reported SES scores to coded invalidation showed a more discernible pattern of association (Figure 8)($r = .37$, $p = .14$; siblings removed).

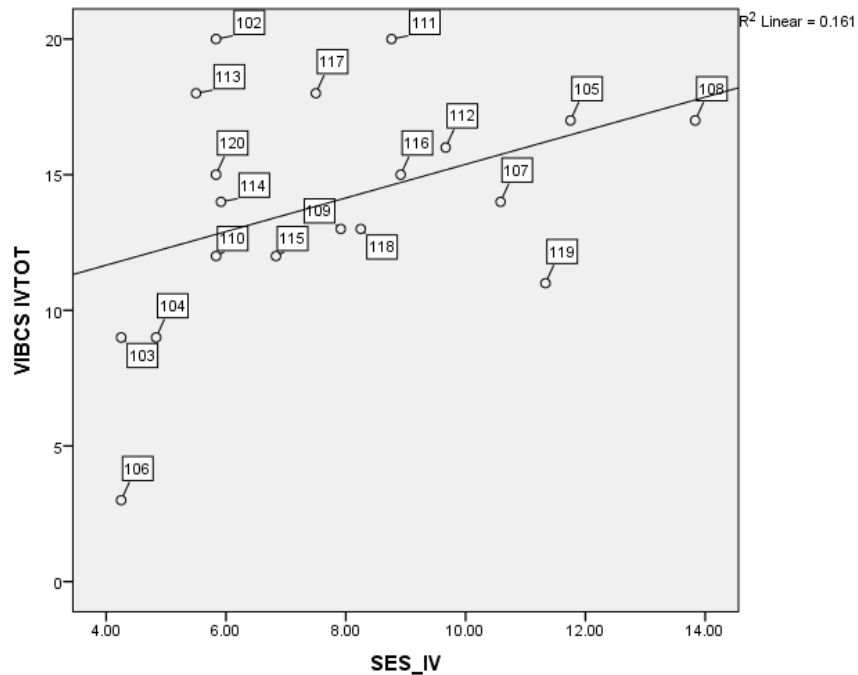


Figure 8: Adolescent reported total invalidation compared to observationally coded total invalidation

Upon further examination, it was noted that the adolescent in 102 fell on the outer edge of the data cluster in this scatterplot as well. In agreement with his/her parent, the adolescent had reported that the discussion s/he had with his/her parent was only “a little bit” like conversations they had before. In view of this indicator of the lack of representativeness of the discussion, paired with similar indication from the parent, and as the adolescent self-report data for this participant showed evidence of underestimation on measures of psychopathological symptoms, it was hypothesized that the adolescent’s responses regarding parental invalidation were likely to be either misleading or invalid. When this data point was removed experimentally, the association was observed to be stronger (Figure 9).

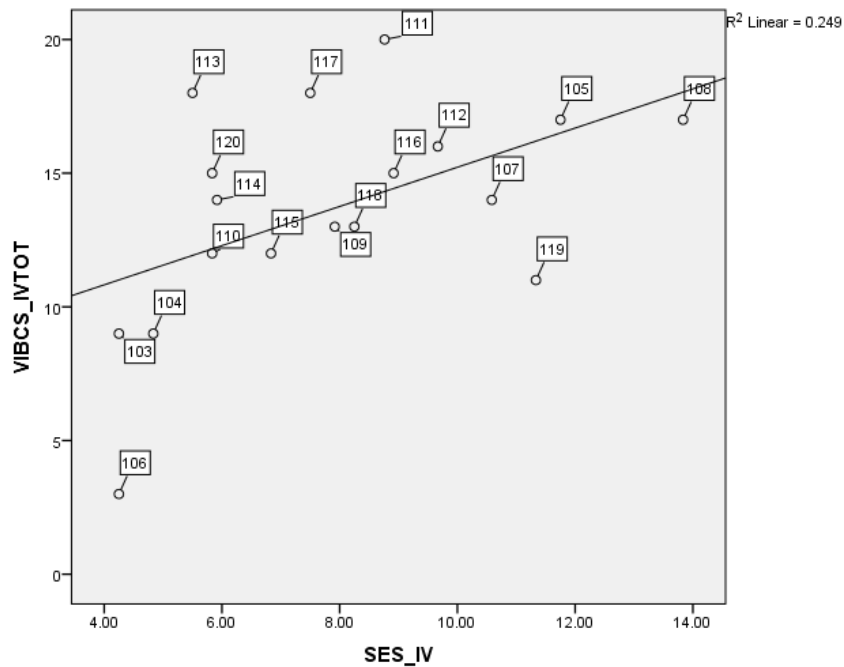


Figure 9: Comparison of adolescent reported total invalidation to observationally coded invalidation, 102 excluded

When calculated (with sibling dyads removed), the correlation between the two measures approached significance ($r = .49$, $p = .06$), however this correlation should be interpreted with caution in such a small sample.

It was also noted that the adolescent participant in dyad 114 had indicated only “a little bit” of similarity between the laboratory task and normal discussions, those in dyads 105 and 111 indicated their discussions were “not much like” normal conversations, and the adolescent in dyad 109 indicated the coded discussion was “not at all like” normal conversations with his/her parent. Of these, only the data point of 111 resembles an outlier in the present comparison. If it were removed, the strength of the pattern of association would increase.

Of further note, although adolescent reports of invalidation in dyads 105 and 108 were observed to be high compared to parent reports of invalidation (as noted earlier in this section and can be seen in Figure 6), observational coding indicated higher levels of invalidation for both dyads during laboratory discussions, and the adolescent reports of past invalidation aligned fairly well with the pattern of association with observationally coded parental invalidation.

These associations seem to indicate that the levels of invalidation observed in the laboratory discussion task may more closely align with adolescents' recalled experiences of invalidation than observed validation matches parents' recalled experiences of invalidating their children.

3.2.3 Measures of PEA and EA

As PEA and EA are theoretically related constructs, responses to measures of these constructs (PAAQ and AAQ) as supplied by parents in this sample were compared to each other to examine possible associations (Figure 10). Because PEA is likely to be quite similar within a parent across siblings theoretically, siblings were removed from this examination a priori. As would be predicted, the association between these measures seems strong in this sample ($r = .79, p < .001$); however, this also gives rise to a question regarding the lack of differences between the two in this small sample: are PEA and EA distinct constructs?

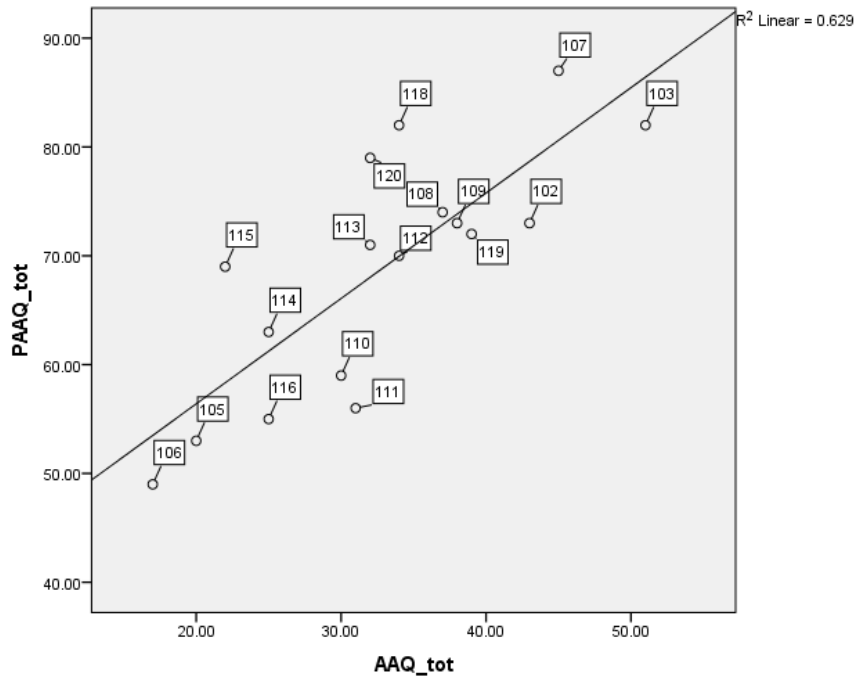


Figure 10: Parental Experiential Avoidance compared to parent Experiential Avoidance scores

3.3 Examination of Hypothesized Models

The model of interest for this study was one of mediation. However, this was a small pilot study and mediational models cannot be accurately tested with a sample size less than about 50 participants, particularly if the mediator is not highly reliable and the effect of the mediator is not strong (Hoyle & Kenny, 1999). In this case, the best approximation may be to examine the association of the hypothesized cause with the mediator, and the mediator with the outcome for some evidence supporting a possibility of mediation.

3.3.1 PEA and Parental Invalidation

The first portion of the proposed mediation model was that increased PEA on the part of parents would make them more likely to behave in an invalidating manner toward their children, in an effort to stop the children's displays of negative emotion as quickly as possible in order to decrease the parents' own discomfort. Therefore, the association between PEA and invalidation in this sample was examined first. In view of potential questions regarding the ability of parents to accurately report their own past invalidating behaviors, observational coding of invalidation was chosen as the measure of invalidation to be utilized in these examinations, and siblings were removed from the comparisons due to the theoretical similarities of PEA across siblings.

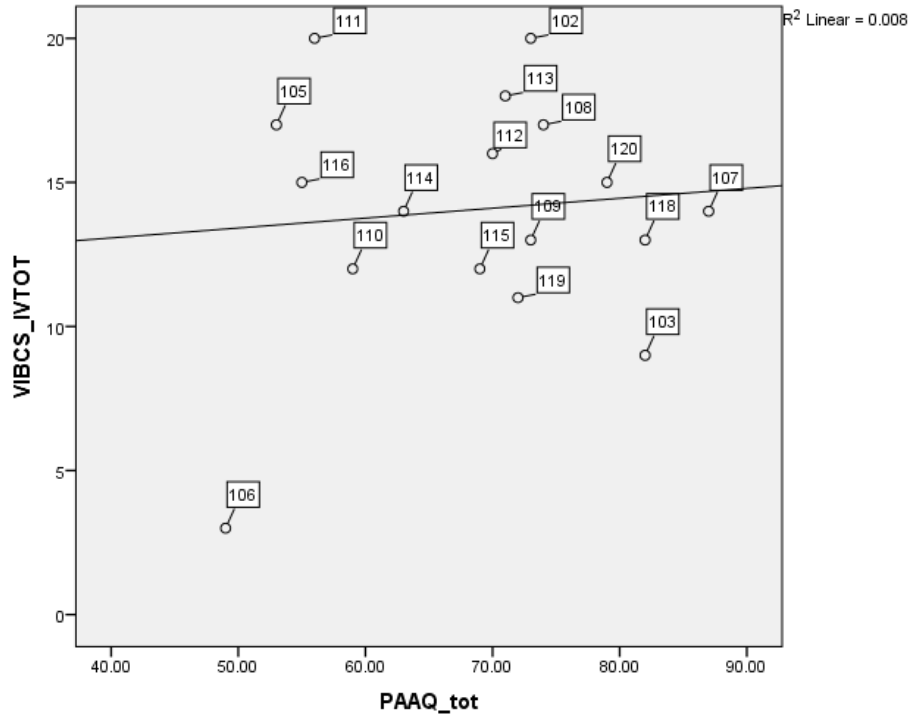


Figure 11: Comparison of observationally coded invalidation and PEA

A pattern of association is somewhat difficult to interpret in this comparison ($r = .09$, $p = .73$)(Figure 11). It is noted that in this sample, the values of invalidation exhibit some ceiling effect; and a single dyad, 106, appears to be an outlier. The observed discussions for dyad 106 were exceptionally low on invalidation, and the coding of invalidation during the discussion is unlikely to be substantially inaccurate. When the data point of 106 is removed from the sample and the correlation is re-calculated ($r = -.34$, $p = .20$), interpretation remains tenuous. A similar exploration of adolescent reported past parental invalidation (SES) compared to PEA was examined, with similarly little apparent pattern of association observed ($r = .07$, $p = .80$; siblings removed).

3.3.2 Invalidation and Adolescent Symptoms of Psychopathology

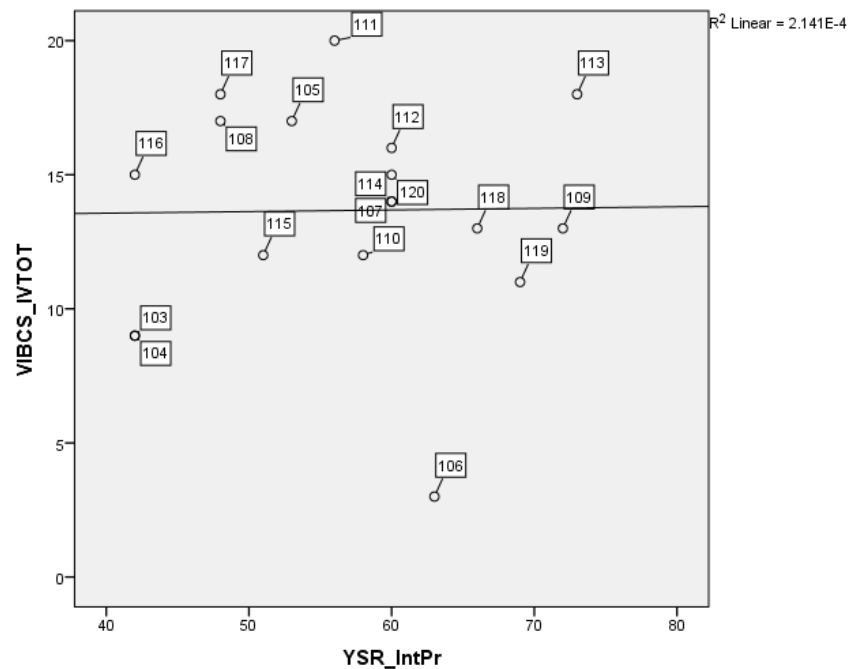
Although the examination of the association between the first two factors of the hypothesized mediational model did not provide a clear pattern, the association between the second two factors was nonetheless examined. It was hypothesized that higher levels of invalidation from parents would be associated with increased levels of child psychopathological symptoms. It was also hypothesized that beyond associations with general symptoms of psychopathology, higher levels of invalidation would be specifically associated with symptoms of suicidality and non-suicidal self-injury (NSSI).

3.3.2.1 Observationally Coded Invalidation and General Symptoms of Adolescent Psychopathology

As parent reports of adolescent symptoms of psychopathology and adolescent reports of their own symptoms seem fairly well-matched in this sample, and no clear

estimate could be made of which group more accurately reported about adolescents' symptoms in this sample (please see the Discussion section and later in this section for more about this), coded invalidation was first compared to adolescent reports of their own symptoms. For these comparisons, data from dyad 102 was removed from the sample a priori, based on the previous observations that the adolescent in that dyad appeared to have consistently underreported symptoms.

There is little discernible pattern of association to be seen in the initial comparisons between observationally coded invalidation and adolescent reported internalizing symptoms ($r = .02$, $p = .95$), externalizing symptoms ($r = -.15$, $p = .56$), and total symptoms of psychopathology ($r = .03$, $p = .89$)(Figure 12).



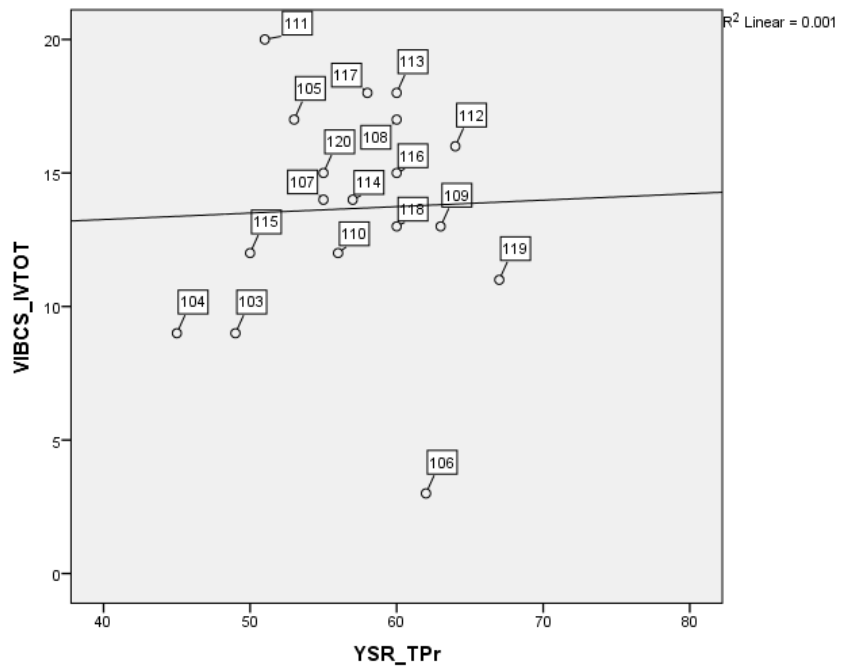
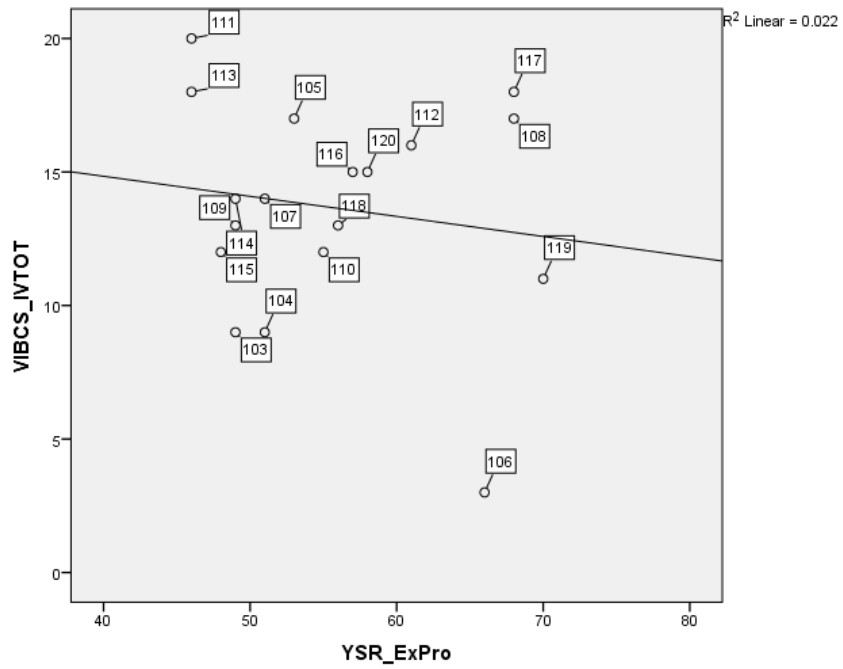
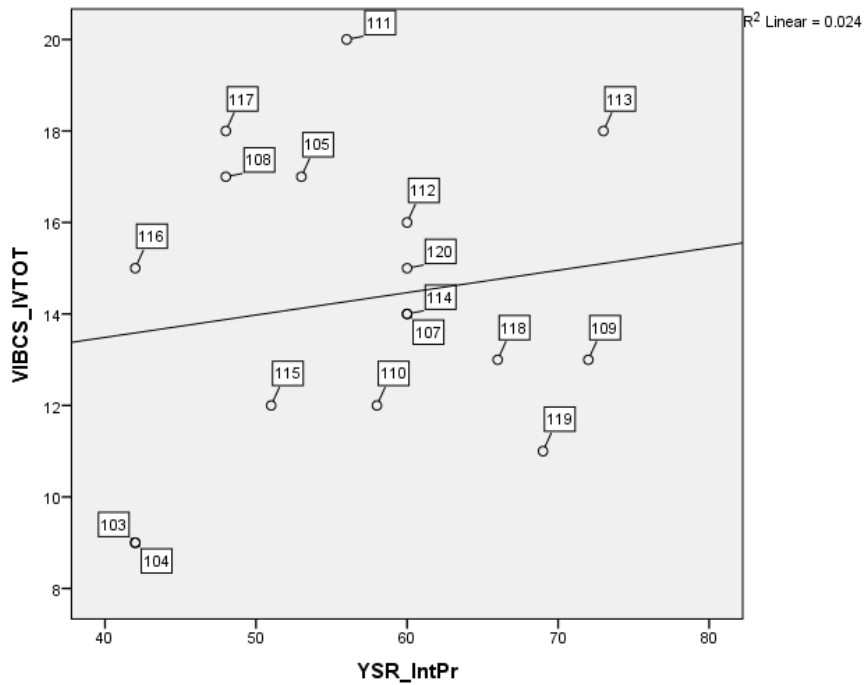


Figure 12: Comparisons of observationally coded invalidation and adolescent reports of symptoms of psychopathology; dyad 102 excluded

Dyad 106 was again an outlier, and although it is not likely to be inaccurately coded, it was removed from the comparisons in order to further explore the remaining data. After removing data from dyad 106 from each comparison, the pattern of association between observationally coded invalidation and adolescent reported symptoms of psychopathology increased marginally overall: internalizing symptoms ($r = .16$, $p = .55$), externalizing symptoms ($r = .09$, $p = .73$), total symptoms ($r = .24$, $p = .35$) (Figure 13).



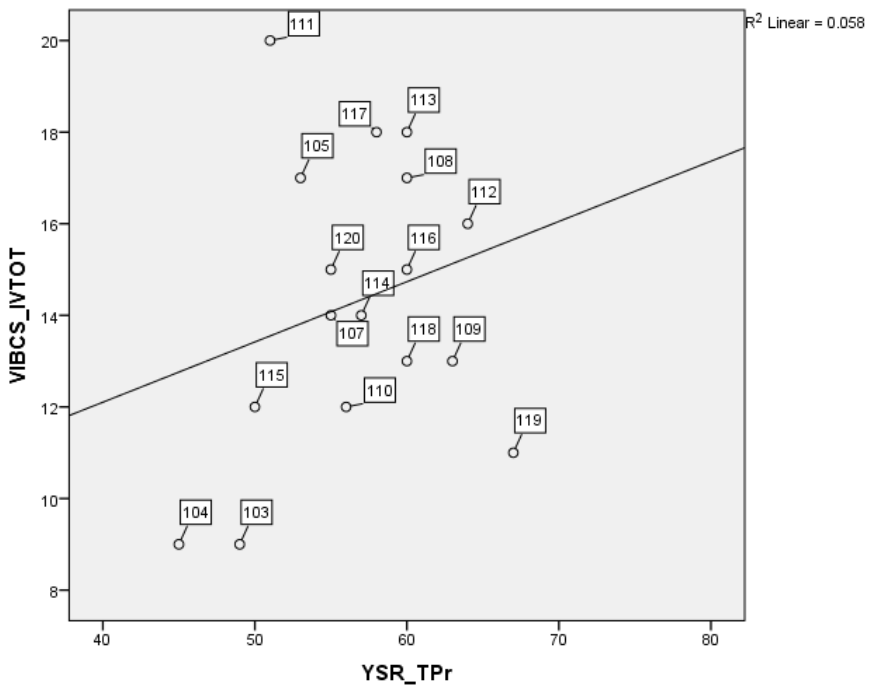
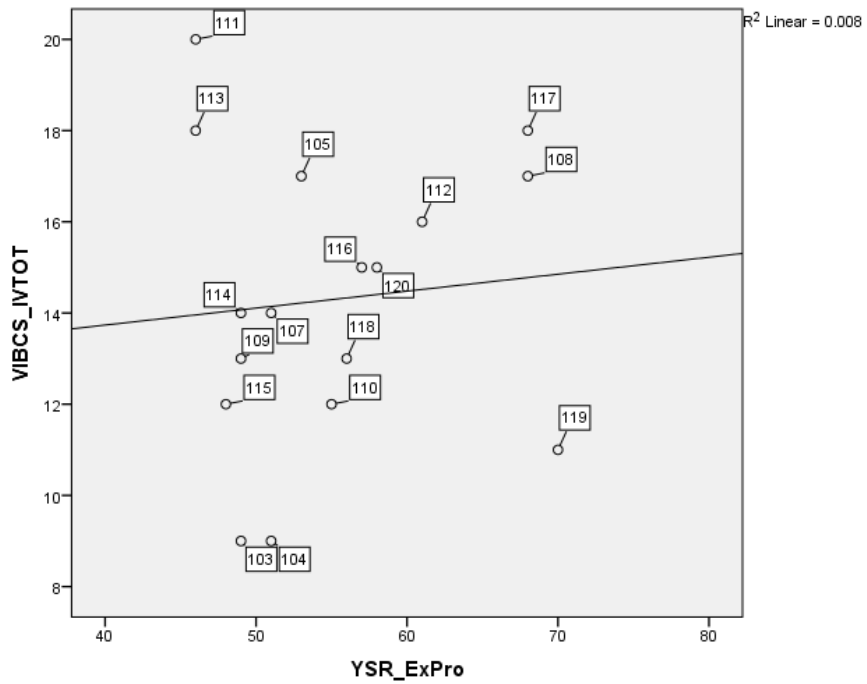
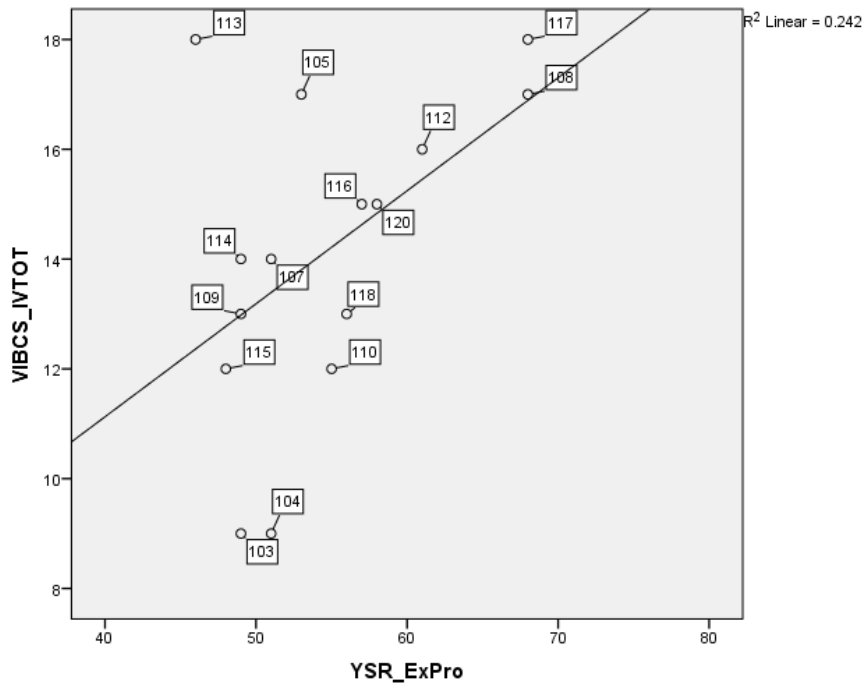
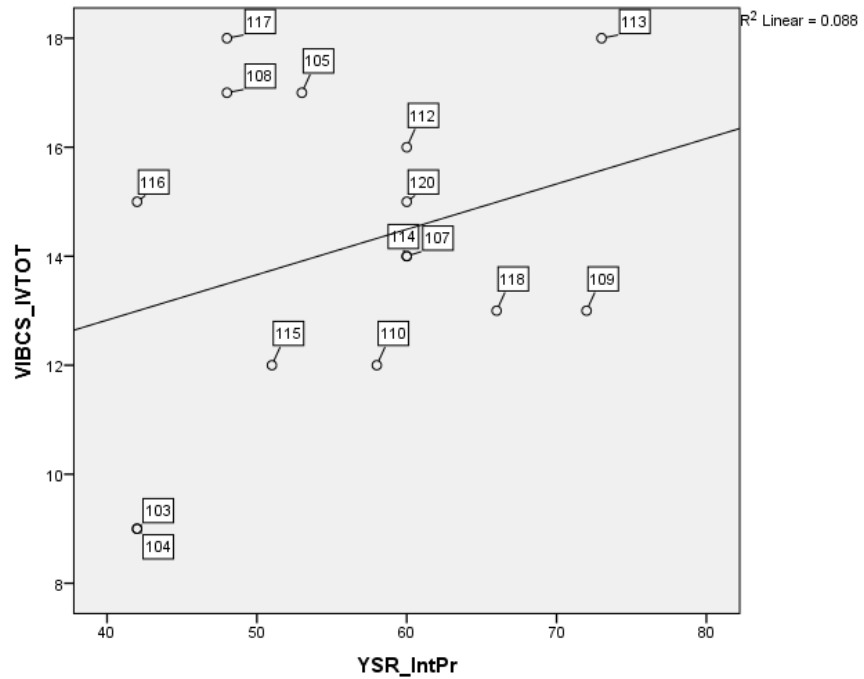


Figure 13: Comparisons of observationally coded invalidation and adolescent reported symptoms of psychopathology; dyads 102 and 106 excluded

It was then noted that dyads 111 and 119 were on the outer edges of the data cluster in each comparison, with dyad 111 appearing on the edge representing high levels of invalidation, and 119 on the edge representing low levels of invalidation. Corroborating evidence for the validity of invalidation coding was then consulted for these two dyads. The adolescent in dyad 111 had indicated after the videotaped discussions that they were “not much like” discussions s/he had had with his/her parent before, and s/he had not reported a substantially elevated recall of previous invalidating behaviors by his/her parent (SES-IV score of 8.76). This perhaps points to less than representative discussions in the laboratory setting. In contrast, the adolescent in dyad 119 reported higher levels of past parental invalidation (SES-IV score of 11.33). S/he however, endorsed that s/he had had conversations with the parent “just like this one before”. Similar to dyad 111, it is possible that the discussions coded for invalidation for dyad 119 were less representative than for other dyads, or that they did not represent the natural range of invalidating behaviors by the parent in dyad 119 very well. Dyads 111 and 119 were then removed from the comparisons to further explore possible patterns.

With dyads 102, 106, 111, and 119 removed from the comparisons, the patterns of association between observationally coded invalidation and adolescent reported symptoms of psychopathology increased appreciably overall: internalizing symptoms (r

= .30, $p = .28$), externalizing symptoms ($r = .49$, $p = .06$), and total symptoms ($r = .64$, $p = .01$)(Figure 14).



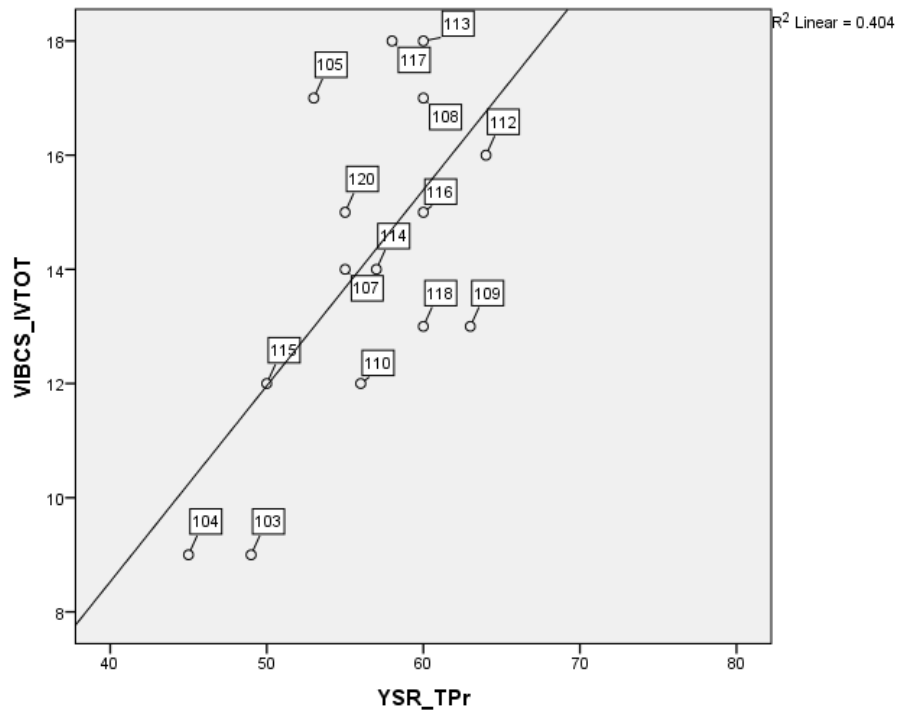


Figure 14: Comparison of observationally coded invalidation and adolescent reported symptoms of psychopathology; dyads 102, 106, 111, 119 excluded

Upon closer examination, it was noted that the pattern of association was most clear in the comparison of observationally coded invalidation to adolescent reported total symptoms, and least clear between observationally coded invalidation and adolescent reported internalizing symptoms. In the case of both internalizing symptoms and externalizing symptoms, one or two data points from adolescents who were reported substantially higher levels of the one type of symptoms than the other (e.g. 117 and 108 in the comparison with internalizing symptoms, 113 in the comparison with externalizing symptoms) disrupted the general pattern. This may support a hypothesis that the association between parental invalidating behavior and adolescent symptoms of

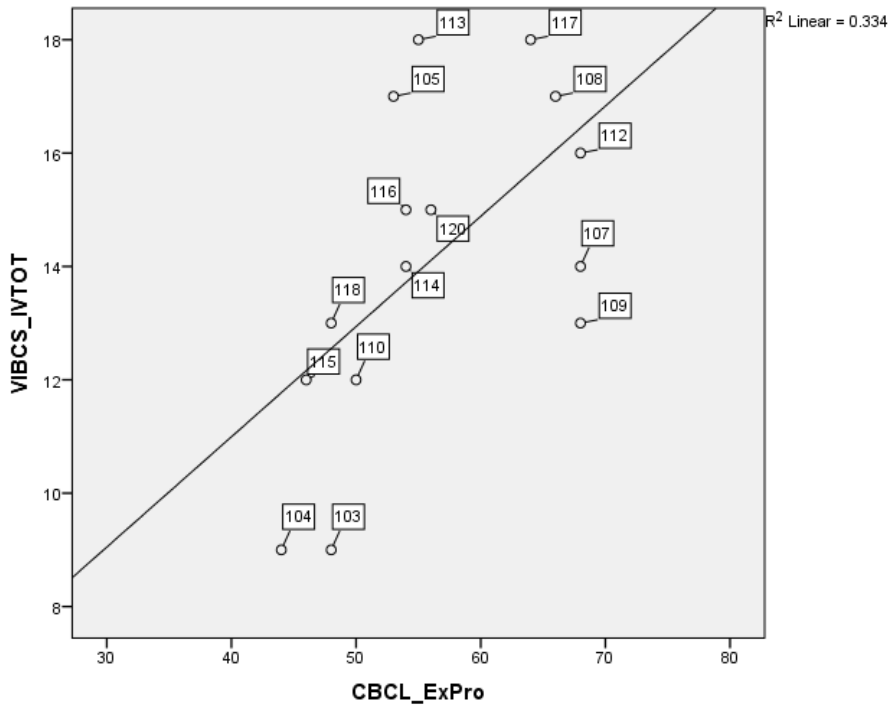
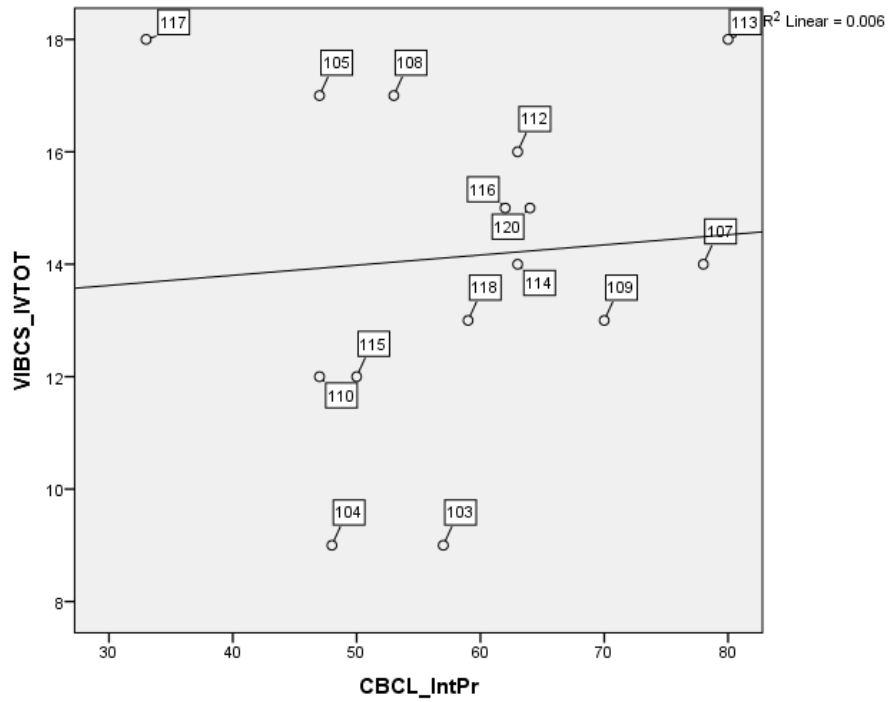
psychopathology may not be specific to a single group or type of symptoms, rather it is most strongly associated with levels of psychopathology in adolescents in general.

However, the pattern of association is notably clearer between observationally coded invalidation and adolescent reported externalizing symptoms. Perhaps parental invalidation is most strongly associated with adolescent externalizing symptoms.

When siblings were removed in order to calculate correlations without those violations of independence, the correlations decreased: internalizing symptoms ($r = .27$, $p = .38$), externalizing symptoms ($r = .36$, $p = .23$), and total symptoms ($r = .51$, $p = .08$); however, the pattern of association remained strongest in the comparison with total symptoms. The removal of these sibling dyads decreased the correlation between invalidation and externalizing symptoms comparatively more than the other comparisons because the adolescent member of dyad 117 - one of the sibling dyads - reported high levels of externalizing symptoms and relatively low levels of internalizing symptoms.

An identical progression of examinations was used to compare observationally coded invalidation with parent reported symptoms of psychopathology in the adolescents, for similar reasons. After dyads 102, 106, 111, and 119 were removed from these comparisons, the patterns of association were somewhat similar: internalizing problems ($r = .08$, $p = .78$), externalizing problems ($r = .58$, $p = .02$), and total problems (r

= .49, $p = .06$), but the pattern of association was strongest between observationally coded invalidation and externalizing problems (Figure 15).



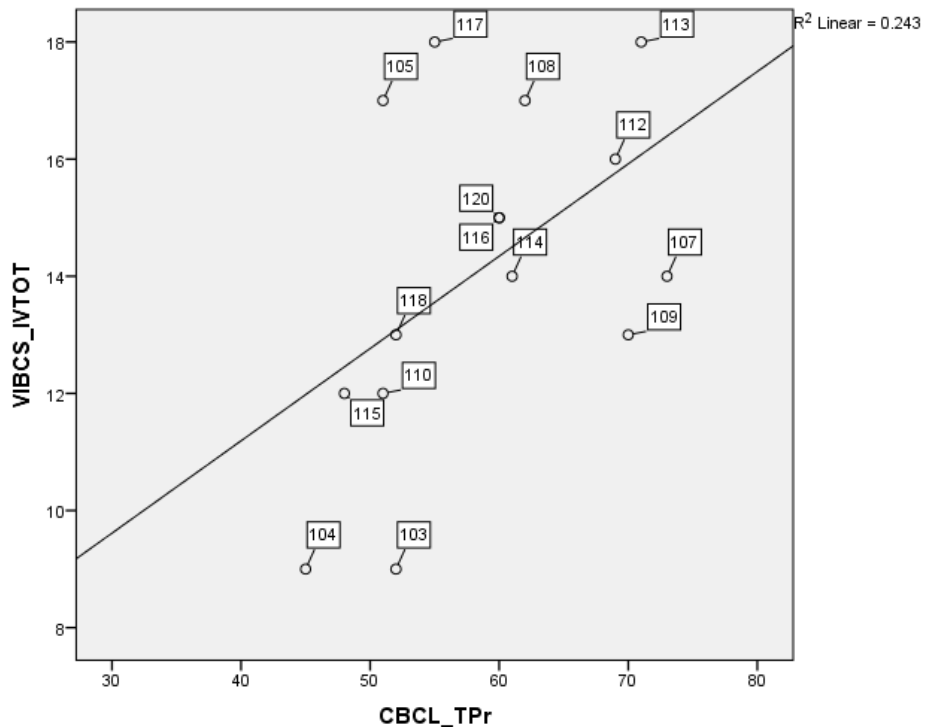


Figure 15: Comparison of observationally coded invalidation and parent report of adolescent symptoms of psychopathology; dyads 102, 106, 111, 119 excluded

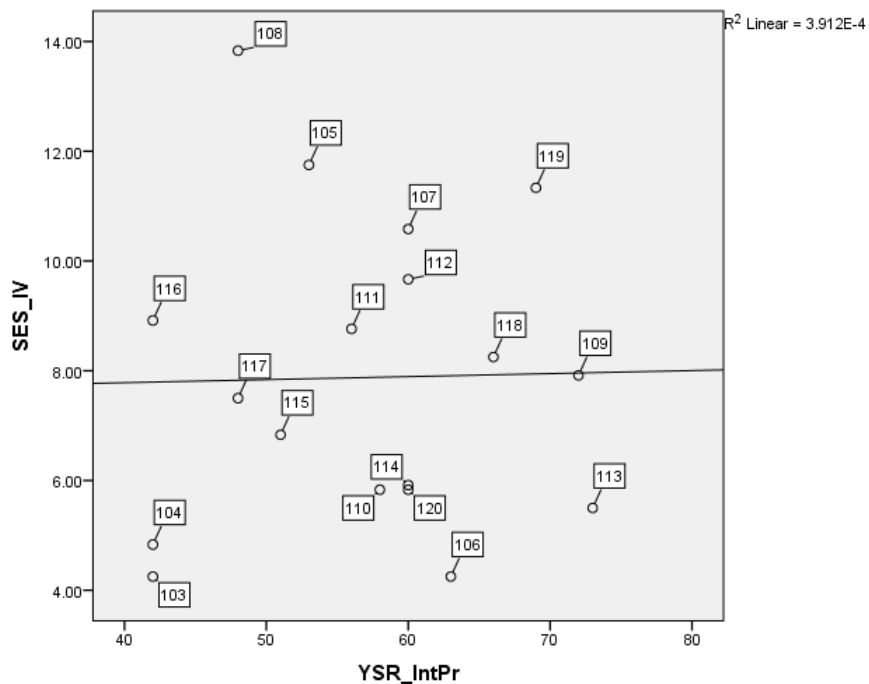
It is possible that parents in this sample were more accurate when rating their adolescents' externalizing (and therefore, more observable) symptoms than rating their internalizing symptoms, and thus the associations between coded invalidation and both internalizing and total symptoms were not as strong as in the case when observationally coded invalidation is compared to adolescent reported symptoms.

When sibling dyads were removed from correlation analyses in order to avoid violation of independence for those reasons, the strength of the correlation between observationally coded invalidation and both externalizing and total symptoms

decreased: internalizing ($r = .26, p = .40$), externalizing ($r = .43, p = .14$) and total symptoms ($r = .47, p = .11$).

3.3.2.2 Adolescent Reported Invalidation and General Symptoms of Adolescent Psychopathology

In order to more fully explore the possible pattern of association between parental invalidation and adolescent symptoms of psychopathology, comparisons were made between adolescent reports of past invalidating behavior by the parent and adolescent reports of their own symptoms of psychopathology. For the first set of comparisons, data from dyad 102 was removed a priori due to questions regarding the validity of self-reports generated by the adolescent in that dyad.



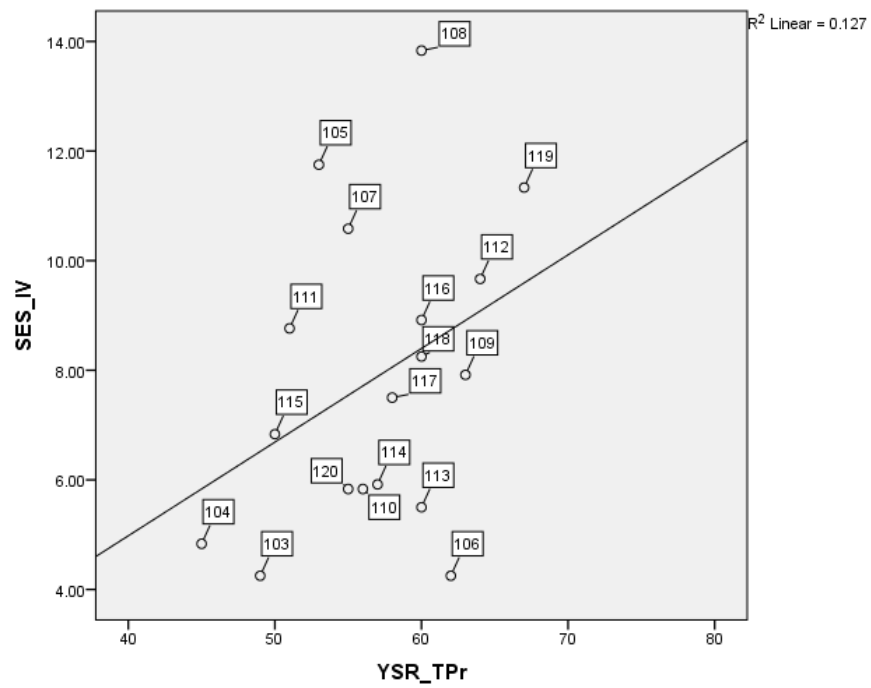
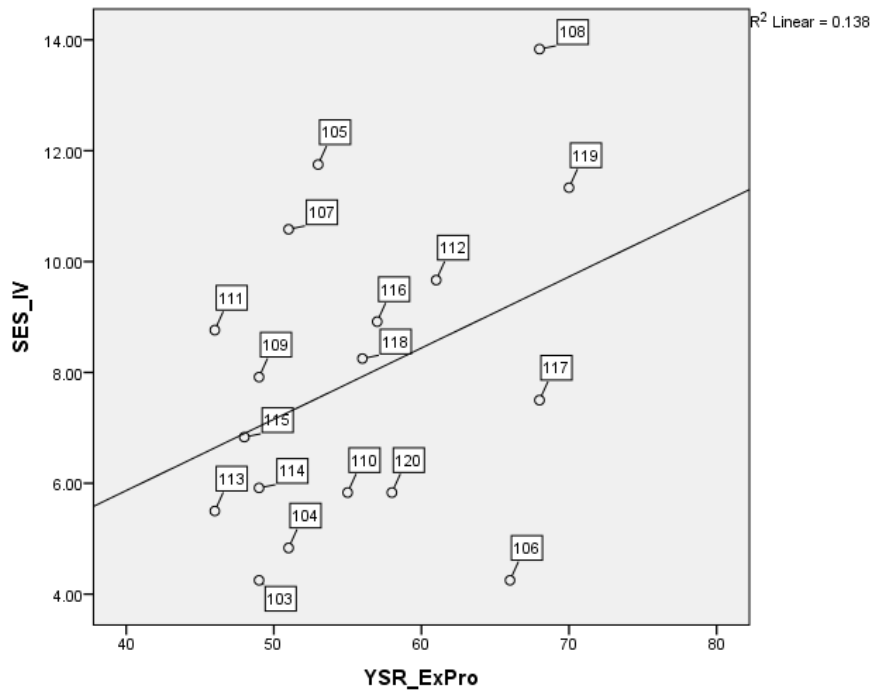
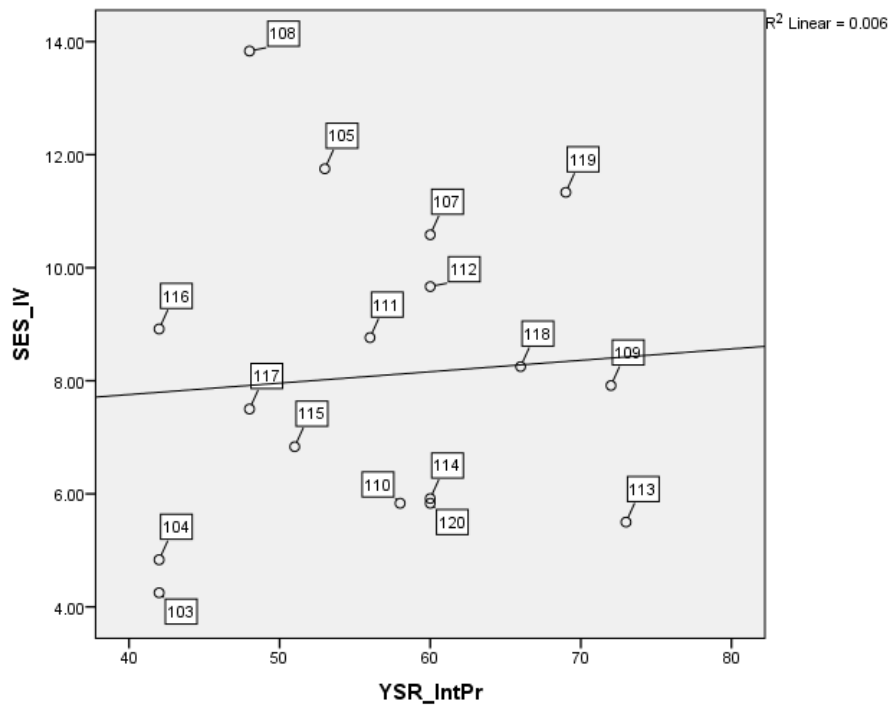


Figure 16: Comparison of adolescent reported past invalidation to adolescent reported symptoms of psychopathology, dyad 102 excluded

Patterns of association are discernible in two of these comparisons with adolescent reported invalidation: internalizing symptoms ($r = .02, p = .94$), externalizing symptoms ($r = .37, p = .13$), and total symptoms ($r = .36, p = .15$)(Figure 16). As the level of invalidation reported or observed in dyad 106 has been questioned as being perhaps anomalous, data from this dyad was then removed from the comparisons for further exploration (Figure 17). This increased the patterns of association for each comparison: internalizing problems ($r = .08, p = .77$), externalizing symptoms ($r = .54, p = .03$), and total symptoms ($r = .47, p = .06$).



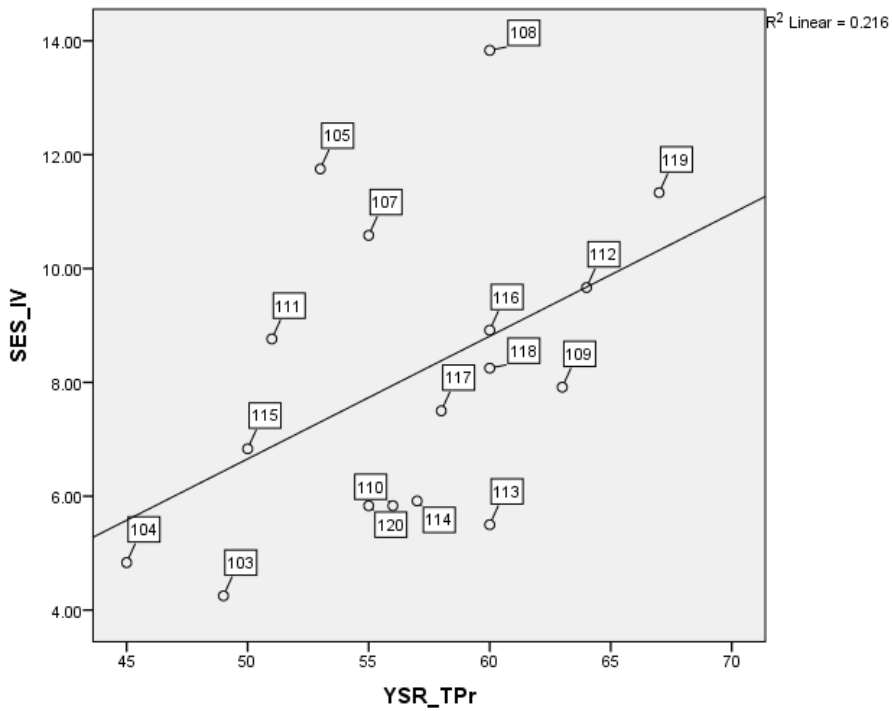
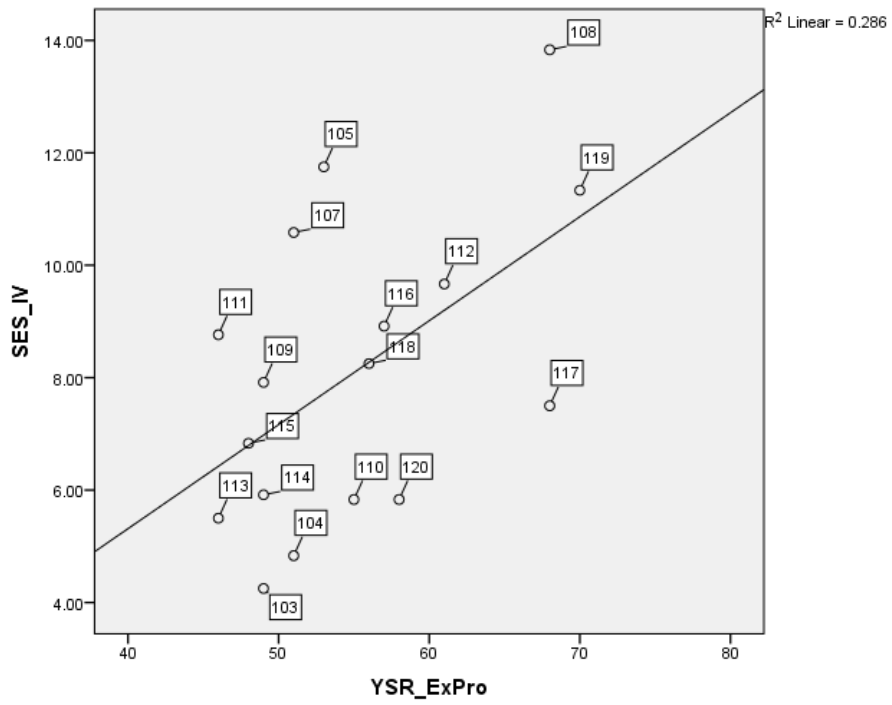


Figure 17: Comparison of adolescent reported past invalidation to adolescent reported symptoms of psychopathology, dyads 102, 106 excluded

When sibling dyads were removed from the correlation analyses in order to avoid violations of independence from those, the correlations for internalizing ($r = -.07, p = .81$) and total problems ($r = .38, p = .17$) decreased, the correlation for the association between adolescent reported invalidation and adolescent reported externalizing problems increased ($r = .62, p = .01$).

When viewed alongside the findings from the previous sections regarding parental invalidation and adolescent symptoms of psychopathology, it seems that an association is possible such that increased parental invalidation is linked to increased levels of adolescent psychopathology. It is unclear whether the association is stronger between invalidation and externalizing symptoms of psychopathology, or symptoms of psychopathology in general.

3.3.2.3 Invalidation and Suicidality, Non-Suicidal Self Injury

Adolescent report of suicidality was first compared to adolescent report of past parental invalidation. Due to questions regarding the validity of adolescent self-report data in dyad 102, it was excluded from this comparison on an a priori basis. Some pattern of association could be seen in this comparison ($r = .25, p = .32$; when sibling data removed $r = .25, p = .34$) (Figure 18).

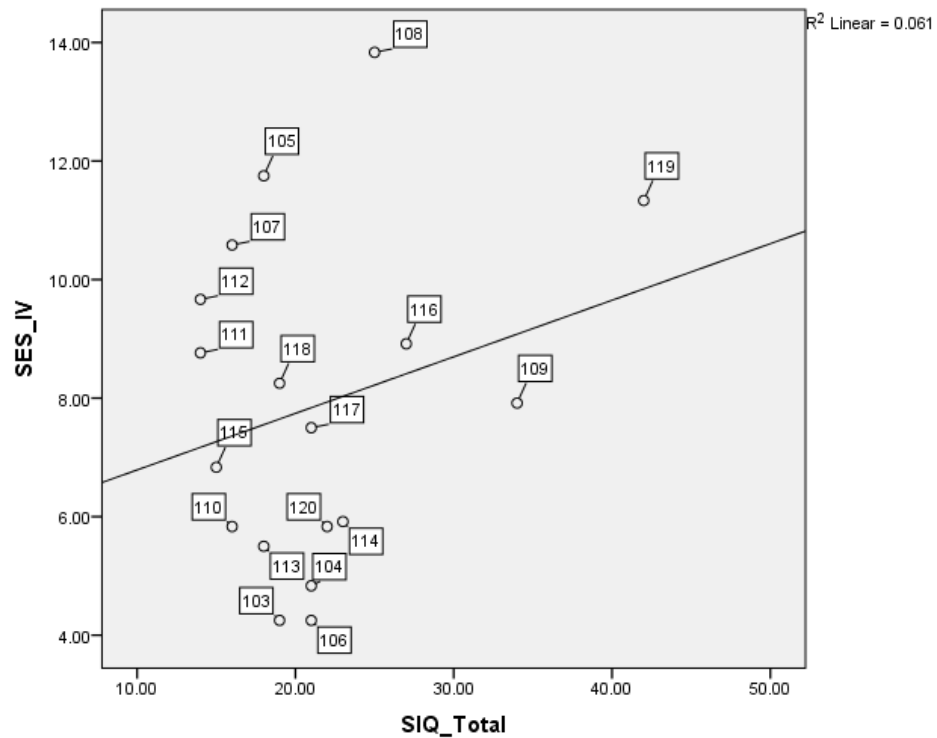


Figure 18: Comparison of adolescent reported past invalidation and adolescent reported suicidality, dyad 102 excluded

Adolescent reported suicidality was also compared to observationally coded invalidation. Based on the findings of previous sets of analyses, several dyads were removed a priori from the sample to make those comparisons. Dyad 102 was removed due to questions regarding the validity of adolescent self-report data in that dyad, and dyads 106, 111, and 119 were removed due to questions about whether observationally coded invalidation data for those dyads were sufficiently representative, as detailed in previous comparisons. Very little pattern of association was observed between these two variables ($r = .04$, $p = .90$, sibling dyads removed)(Figure 19).

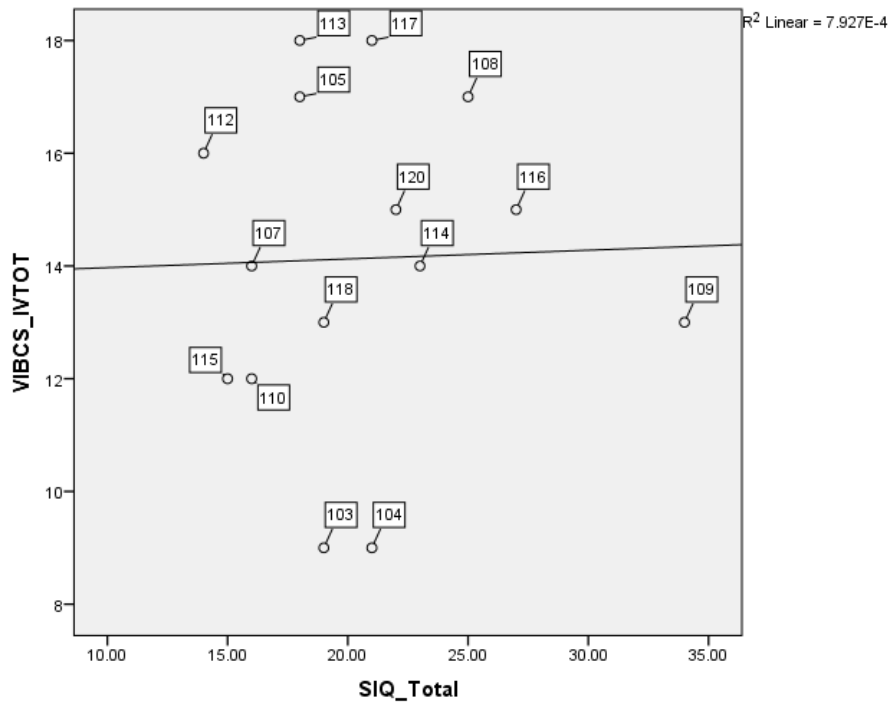


Figure 19: Comparison of observationally coded invalidation and adolescent reported suicidality, dyads 102, 106, 111, 119 excluded

Based on these comparisons, a pattern of association between parental invalidation and adolescent suicidality may exist in a larger sample, or it may only be between adolescent reported past invalidation and adolescent reported suicidality.

Adolescents in 6 dyads reported they had ever engaged in NSSI in their lifetimes. Despite the small number, the estimates of episodes of NSSI reported by the adolescents were compared to measures of invalidation. When adolescent reported past parental invalidation was compared to adolescent estimate of lifetime episodes of NSSI, a pattern consistent with the hypothesis was observed ($r = .62$, $p = .19$)(Figure 20).

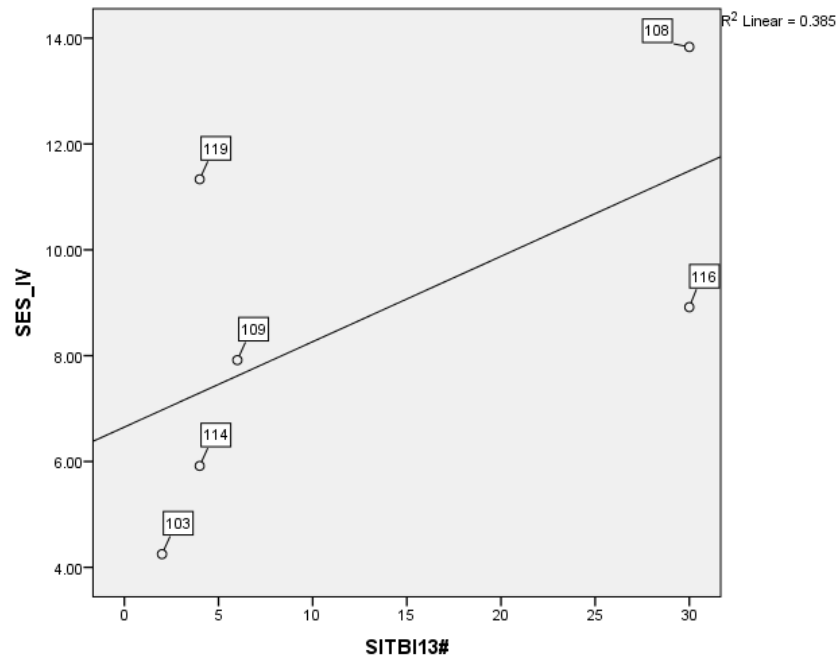


Figure 20: Comparison of adolescent reported past invalidation to adolescent estimate of lifetime NSSI episodes

Similarly, when adolescents' reported episodes of NSSI were compared to observationally coded invalidation, a pattern of association in the hypothesized direction was observed, to a stronger degree ($r = .81, p = .05$)(Figure 21).

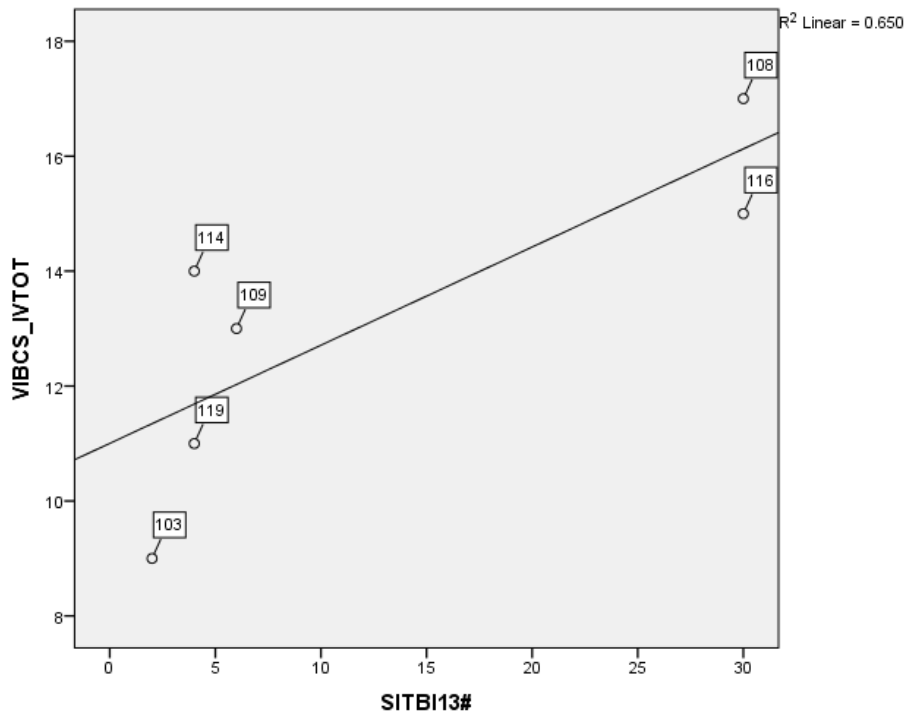


Figure 21: Comparison of observationally coded invalidation to adolescent estimate of lifetime NSSI episodes

These comparisons support the hypothesis that a pattern of association between parental invalidation and adolescent self-injurious behavior would be seen in a larger sample.

3.3.3 Parent EA and Adolescent EA

An alternative hypothesis that experiential avoidance in parents is somehow transferred to adolescents through either modeling processes or even biological heritability was posed at the onset of this study. In order to investigate this, the pattern of association between EA in parents (as measured by the AAQ) and in their adolescents (as measured by the AFQ-Y) was examined. When AFQ-Y data was examined prior to making comparisons, it was noted that the adolescent in dyad 103 reported a score of 0 on EA, which seems unlikely to be valid. The data point for 103 was removed from the

comparison for this reason, and the data point for 102 was removed for previously stated reasons.

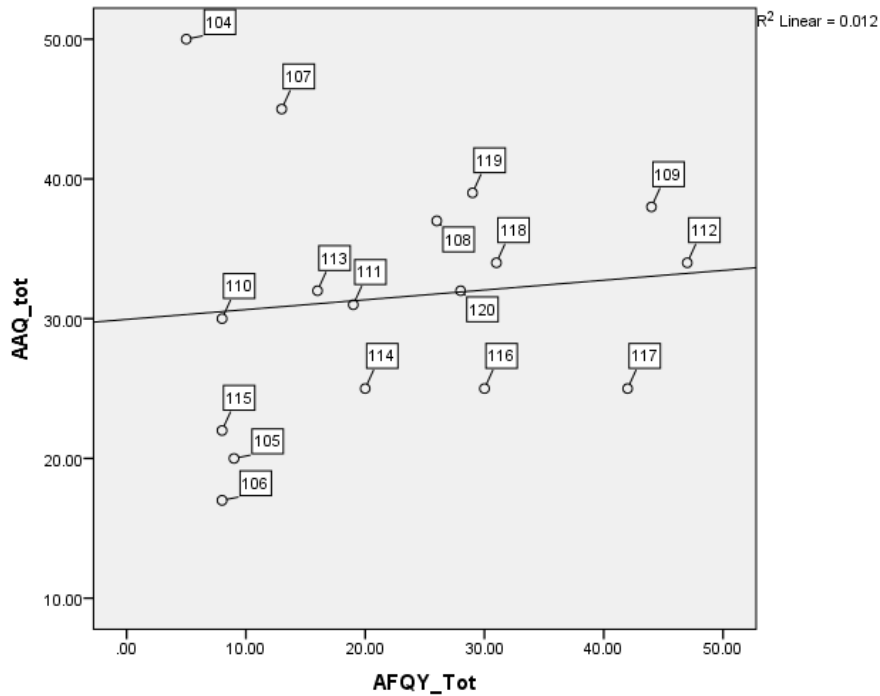


Figure 22: Comparison of parent experiential avoidance to adolescent experiential avoidance, dyads 102, 103 excluded

Some pattern of association may be seen in this comparison (Figure 22). The data points for dyads 104 and 107 appear to outliers to the overall pattern; however, there is no specific reason to believe the data from either of these dyads is invalid. One of these dyads, 104, is a sibling dyad, and when sibling dyads were removed to calculate the correlation, the association was relatively strong ($r = .48$, $p = .07$; siblings removed); however without removing siblings, the association was considerably weaker ($r = .11$, $p = .68$). It is possible that in a larger sample, there would be support for direct transmission of EA in parents to adolescents.

3.4 Post Hoc Examination of Another Hypothesis

During the implementation of this study, an alternative hypothesis was formulated. Perhaps adolescent EA mediates the association between parental invalidation and adolescent symptoms of psychopathology, such that when parents behaviorally display higher levels of invalidation with their children, the children become experientially avoidant and this then increases the chances of the child exhibiting emotional and behavioral symptoms of dysregulation in the form of symptoms of psychopathology. In order to investigate this possibility in this small sample, the same procedure as described for examining the first mediational hypothesis was followed.

3.4.1 Parent Invalidation and Adolescent EA

To examine the first portion of the alternative mediation model, scores of observationally coded parental invalidation of the adolescent (P-CVIBCS) were compared to adolescent scores of experiential avoidance (AFQ-Y). Data from dyads 102 and 103 were excluded from the comparison for previously described reasons. A somewhat noticeable pattern of association was observed ($r = .26$, $p = .35$; sibling dyads removed)(Figure 23).

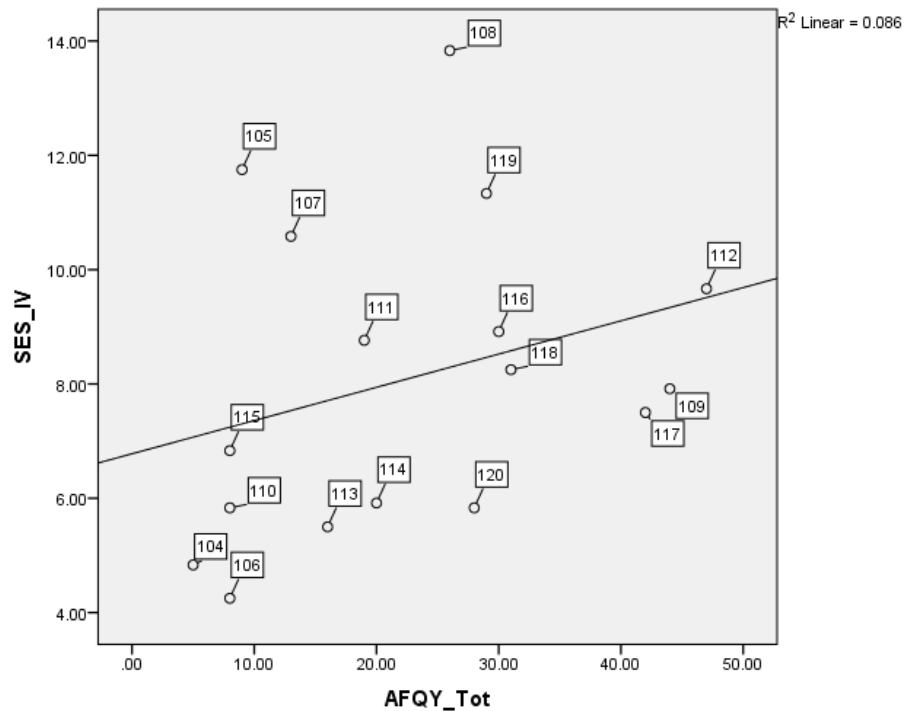


Figure 23: Comparison of adolescent reported past invalidation to adolescent experiential avoidance, dyads 102, 103 excluded

Adolescent EA was also compared to observationally coded invalidation. Dyads 102, 103, 106, 111, and 119 were excluded a priori from the comparison for previously stated reasons regarding self-report and observationally coded data for those dyads. A noticeable pattern of association was also observed in this comparison ($r = .40, p = .15$)(Figure 24). The calculated correlation was decreased by the removal of sibling dyads 104 and 117 in order to avoid violations of independence ($r = .09, p = .78$).

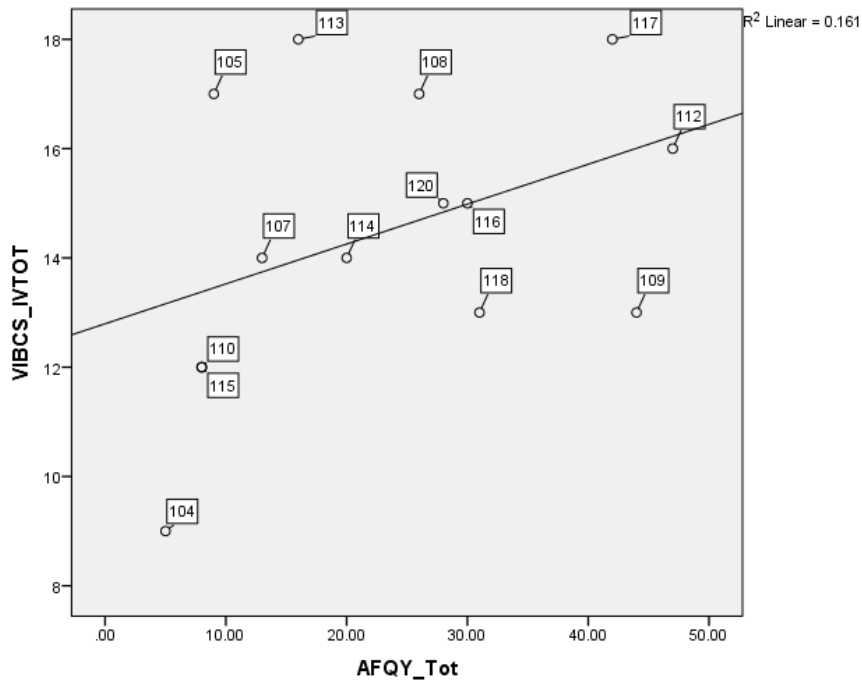


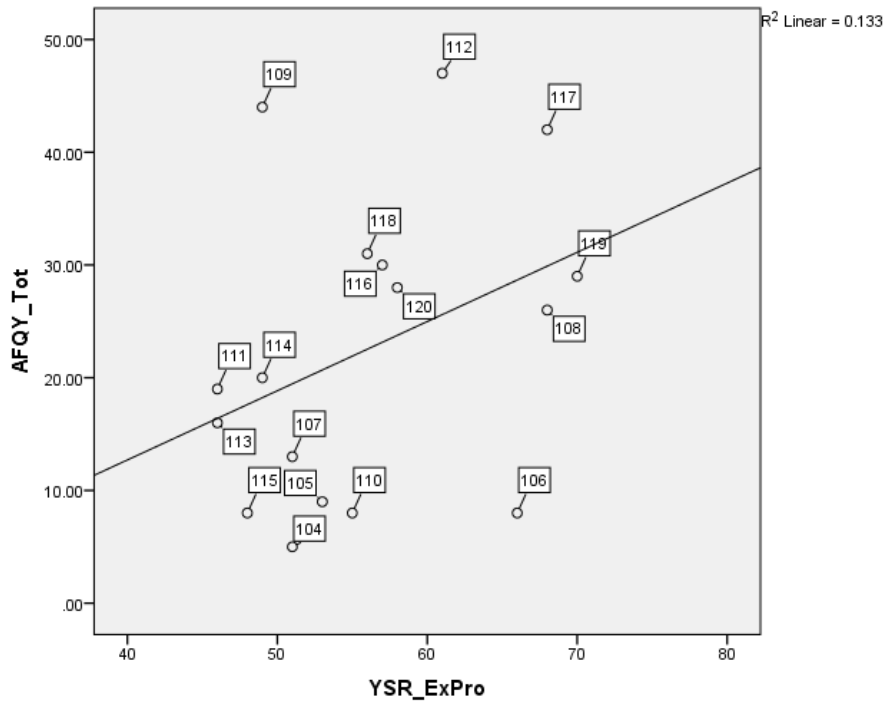
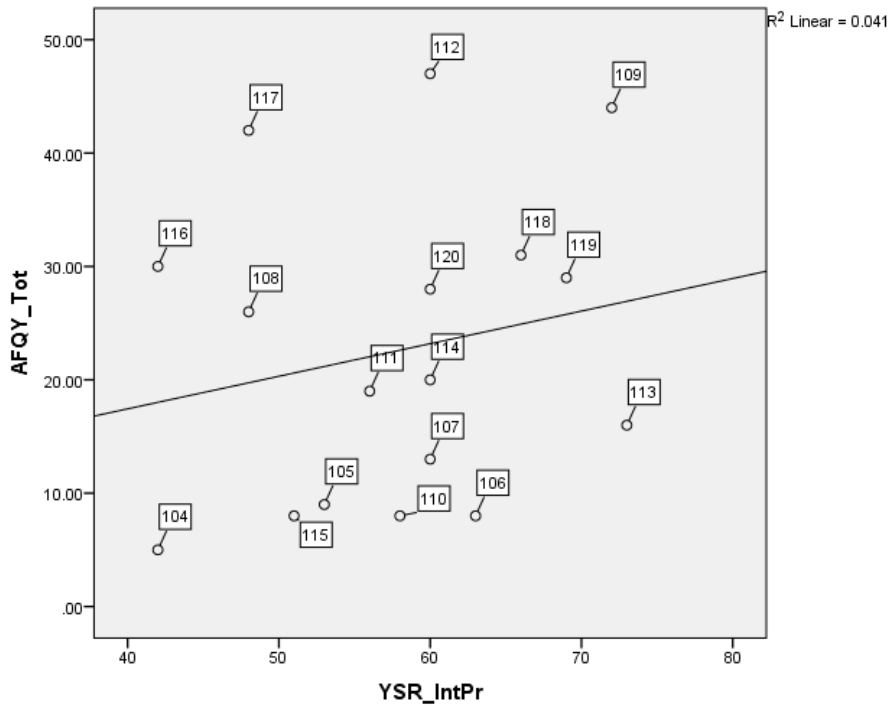
Figure 24: Comparison of observationally coded invalidation to adolescent experiential avoidance; dyads 102, 106, 111, 119 excluded

Based on this data, a pattern of association between parental invalidation and adolescent EA may be possible in a larger sample based on this data.

3.4.2 Adolescent EA and Symptoms of Psychopathology

To examine the second portion of the hypothesized post hoc mediation, adolescent reports of EA were compared to adolescent and then parent reports of adolescent symptoms of psychopathology. Dyad 102 was excluded from the comparison as a result of previously detailed questions regarding the validity of adolescent self-reports in that dyad, and dyad 103 was excluded because of concerns regarding the validity of the AFQ-Y for the adolescent in that dyad. A pattern of association was discernible, particularly between adolescent EA and adolescent reported

total symptoms: internalizing ($r = .22, p = .44$), externalizing ($r = .23, p = .42$), and total symptoms ($r = .62, p = .02$)(Figure 25).



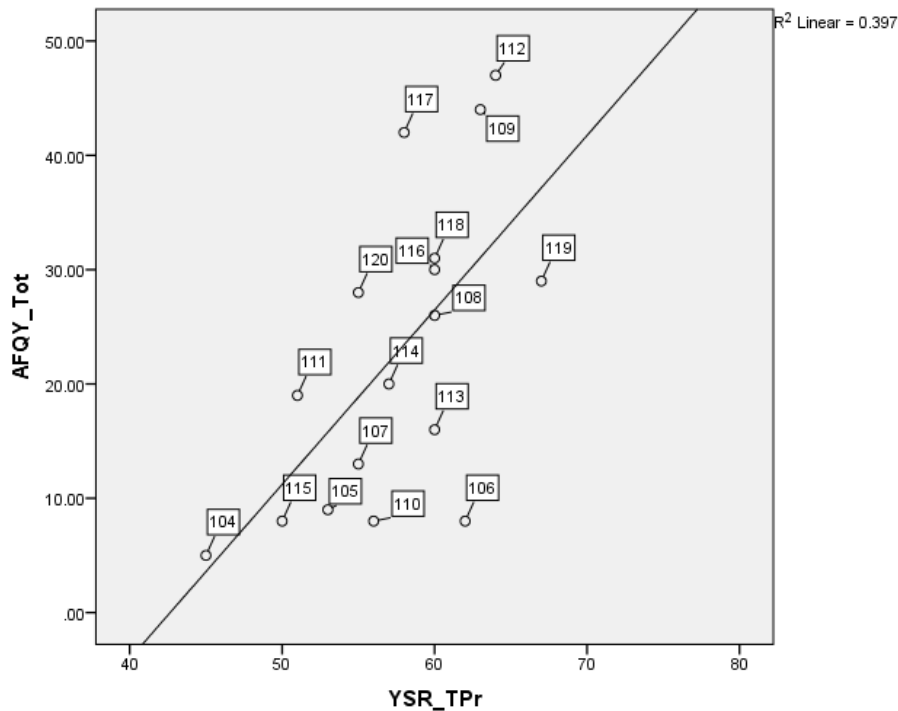
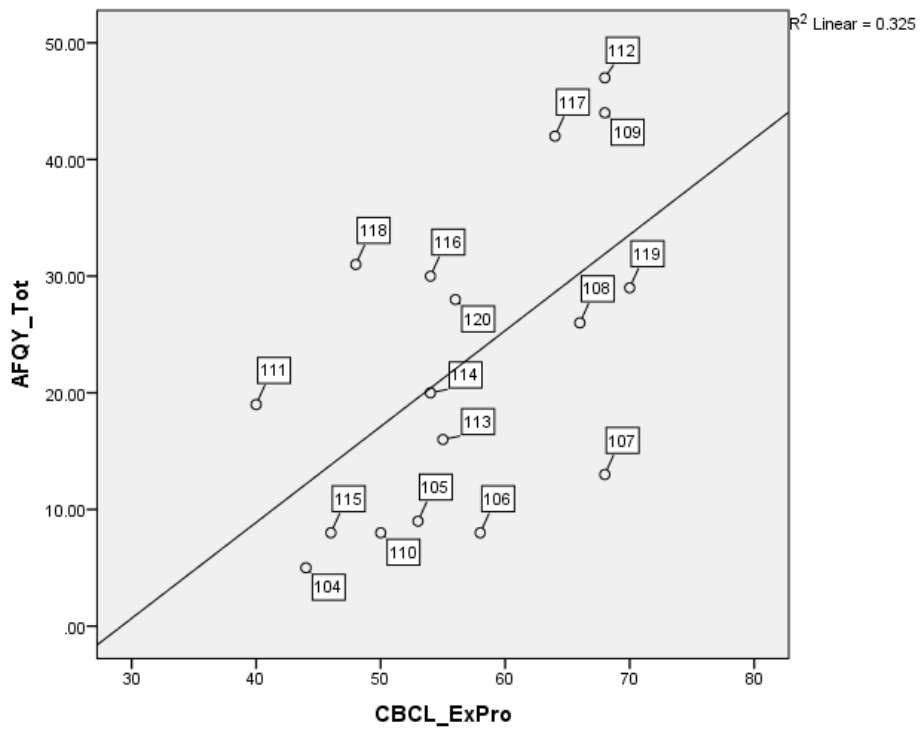
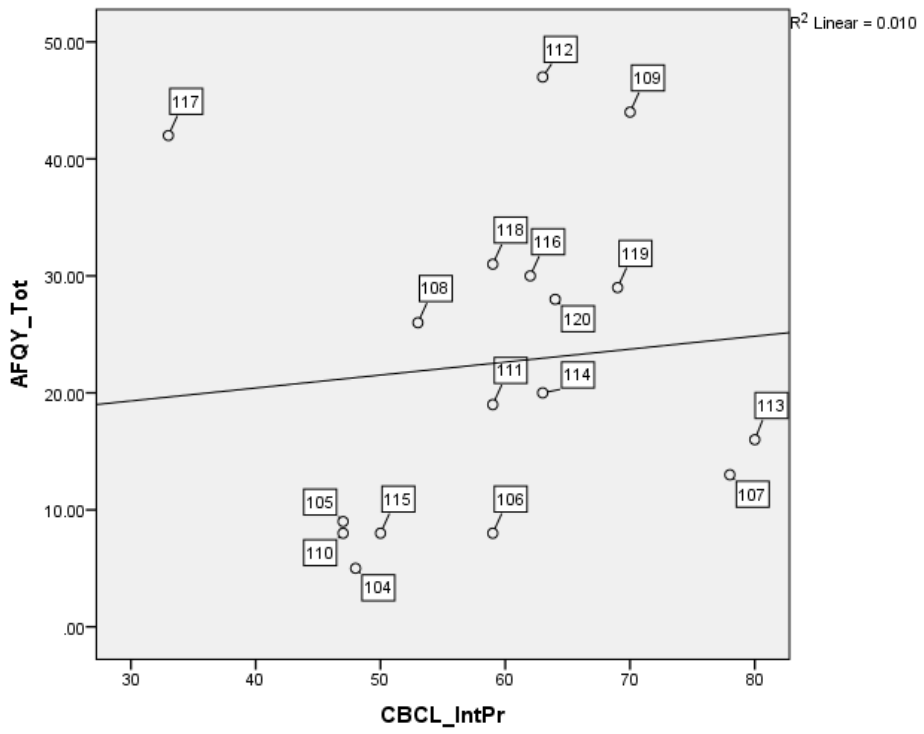


Figure 25: Comparison of adolescent experiential avoidance to adolescent reported symptoms of psychopathology, dyads 102, 103 excluded

Adolescent EA was then compared to parent reports of the adolescents' symptoms of psychopathology. When adolescent EA was compared to adolescent reports of psychopathological symptoms, dyads 102 and 103 were removed from the comparison on an a priori basis due to previously discussed concerns. Similar to comparisons with adolescent reports of symptoms, patterns of association were noted between adolescent EA and parent reported internalizing symptoms ($r = .32$, $p = .24$; sibling dyads removed), externalizing symptoms ($r = .49$, $p = .07$; sibling dyads removed), and total symptoms of psychopathology ($r = .49$, $p = .06$; sibling dyads removed)(Figure 26).



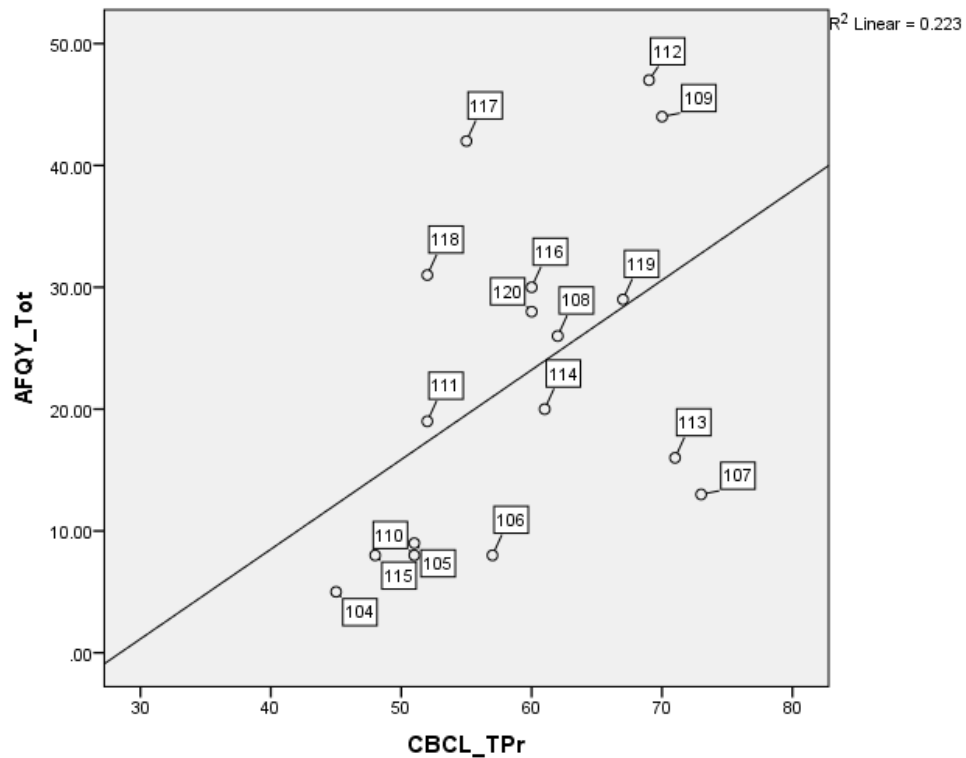


Figure 26: Comparison of adolescent experiential avoidance and parent reported symptoms of adolescent psychopathology; 102, 103 excluded

Although a test of a model of mediation cannot be performed on this small sample, a discernible pattern of association between both the hypothesized cause and mediator, and between the mediator and outcome, support the possibility for this mediational model functioning in a larger sample.

4. Discussion

4.1 Feasibility

One of the primary purposes of a pilot study is to assess the feasibility of continuing the study on a larger scale, and to evaluate the methods and procedures for inclusion in a larger study. This pilot study was found to be implementable, and sufficiently acceptable to participants. However, the feasibility of a larger study is substantially decreased by difficulties in recruiting participants from the target population. It is possible that much of the difficulty stemmed from the sample being an exclusively clinical one. Although adolescents were being treated for any diagnosis and there were no requirements for current severity, it is likely that families in which an adolescent is being treated by a mental health care provider are critically stressed. It may be too difficult for many such families to be adequately motivated to spend approximately 2 hours in an activity that is unlikely to benefit them directly, particularly when their schedule already feels too full and/or time together is not always pleasant. A possible solution would be to increase the incentive for participation, in order to increase perceived benefit and therefore motivation. It would likely also be helpful to extend recruitment to a non-clinical population in order to increase the range of symptoms and behaviors, and to provide stronger comparisons. Expanding the range of eligible participants in this way would be likely to increase participant recruitment as well.

4.2 Measures

This investigation found that the reports of parents and adolescents in this sample regarding the adolescents' symptoms of psychopathology corresponded with each other relatively well, which could be interpreted as an indicator of valid reporting from both groups. However, as both measures are self-report measures with no reliable third-party data regarding adolescents' symptoms available for comparison, it is difficult to estimate which reporter is the more accurate reporter. Adolescent internalizers may be better at describing their own internal and invisible states, whereas adolescent externalizers may not have sufficient insight regarding their behavior to accurately report. On the other hand, the behaviors of externalizers may be more salient to parents and therefore susceptible to overreporting from parents. Within examinations of associations between variables in this study, both adolescent and parent reports of child symptoms functioned similarly. In this study, a primary choice of reporter for analyses involving adolescent symptoms was not clearly determined.

From a theoretical standpoint, the strong pattern of association between PEA and EA was less reassuring: are PEA and EA truly separate constructs? Certainly the two could be closely tied, but in a larger sample than the present one, it would be hoped that parents would appear who score more divergently on the two scales. As PEA is a new construct, more investigation of this question would likely be helpful.

In this investigation, comparisons of parent and adolescent retrospectively recalled reports of parental invalidation with each other, and with observationally coded parental invalidation provided some evidence that adolescent reports may show more agreement with coded invalidation than with parent reports, and that parent reports may not agree with observationally coded invalidation particularly well. To a degree, observationally coded invalidation would be expected to be more similar to adolescent reports of invalidation, as the coding of invalidation is intended to be focused upon the function of the parent's behaviors: how do they impact the adolescent? When a parent reports on how s/he responds to his/her child's emotions, it is likely a report of precisely that – how s/he responds. When an adolescent reports on the responses of a parent, it is about events that have likely impacted the child. Due to the normative and developmentally appropriate direction of influence in parent-child relationships, it is probable that the events both parties are reporting about (parental invalidating behaviors) and their effects are more salient to the child. The impact of those invalidating behaviors is not always easily observable to the parent. Additionally, the items of the CCNES are fairly transparent in terms of invalidating behaviors (e.g., "If my child were shy and scared around strangers... I would tell my child that he/she is being a baby"), which could make honest reporting more difficult. It is reasonable to assume that strongly invalidating behaviors are not logical, intentionally chosen behavior choices by most parents, but a reaction in the moment. When considering them no

longer in the moment, they are likely to seem less reasonable to most parents, which may then decrease the willingness of parents to report those behaviors.

4.3 Exploration of Models

Support for the initial mediational model of invalidating parental behavior playing a mediating role between PEA and adolescent symptoms of psychopathology was tenuous, in particular due to the analyses of the first leg of the mediation (Figure 27). Comparing PEA with both observationally coded parental invalidation and adolescent reported past parental invalidation showed little association. However, the second leg of the hypothesized mediation model seemed to hold more promise. When both observationally coded parental invalidation and adolescent recalled parental invalidation were compared to adolescents' and parents' reports of the adolescents symptoms of psychopathology, associations between invalidation and total symptoms, as well as invalidation and externalizing symptoms, were observed. The relative strength of these two patterns is not clear, and this would need specific exploration in further investigations of these questions. Some support was also gained for the hypothesis that parental invalidation would show some association with symptoms of suicidality and NSSI, particularly when both observationally coded invalidation and adolescent reported past invalidation were compared to adolescent estimates of lifetime episodes of NSSI.

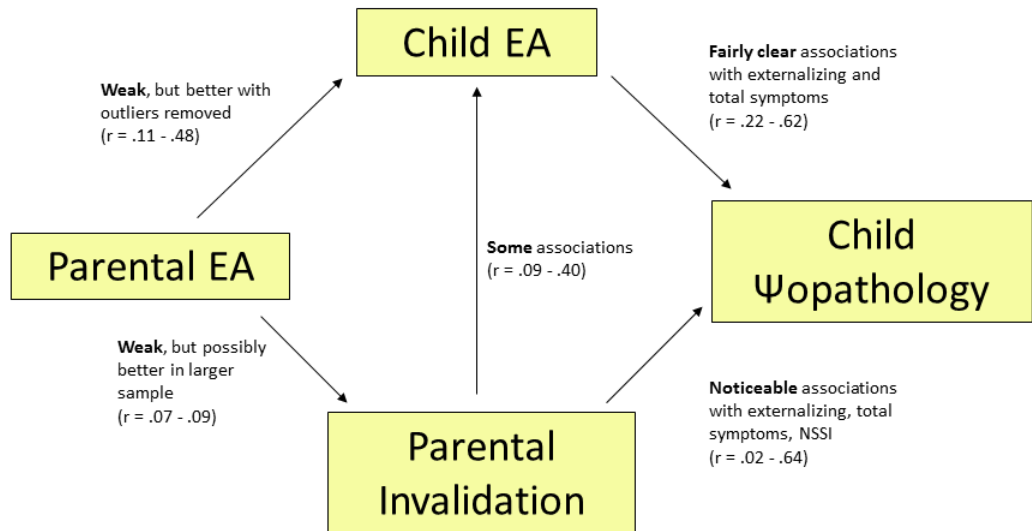


Figure 27: Summary of Explorations of Models

There was some support for direct transmission of EA from parents to adolescents when adolescent EA was compared to parent EA.

A second, post hoc mediational model was also probed in this pilot study. It was hypothesized that adolescent EA may mediate the association between parental invalidation and adolescent symptoms of psychopathology. The pattern of association in comparisons of variables in the first leg of this model was observable, but relatively weak. However, as would be supported by the model of EA and findings in adult populations, the association between adolescent EA and both adolescent reports and

parent reports of adolescent symptoms of child psychopathology were relatively strong. Further investigation of this model in a larger sample could prove to be informative. This model is intriguing, as it suggests a connection between invalidation and experiential avoidance in the etiology of psychopathology. These two constructs are not often examined within single studies, and yet may be interconnected. Parental invalidation may in some circumstances function as an external form of thought and/or emotional suppression for children and adolescents. If this is the case, it perhaps follows that a chronic external pattern of suppression could be internalized and be expressed as experiential avoidance. Further investigation of this model seems warranted.

Each of the above models were explored through the use of correlational analyses, thus no directionality of these models can be tested. Further, as this was a small pilot study, these explorations should at most be regarded as hints of what may be found in a larger sample. The questions remain interesting, and answers could provide insights valuable to clinical interventions.

4.4 Clinical Implications

The biosocial model of BPD identifies invalidating environments as a etiological factor in this particular personality disorder; and invalidating environments have been associated with more general increased difficulties in emotional regulation for children and adolescents. Clinical interventions with families, as well as with children and adolescents, provide unique opportunities to reduce parental invalidating behaviors

through education and change strategies. If PEA were found to be a root of invalidating parental behavior, acceptance-based strategies for parents such as education regarding the inevitability of negative emotions for children, and cognitive restructuring regarding the meaning of negative emotions in children could be helpful in this endeavor.

Alternatively, if EA in adolescents is found to be a mediator of the association between parental invalidation and child symptoms of psychopathology, acceptance-based treatments aimed at reducing EA within adolescents could be helpful in reaching the same goal, and may even be more effective than focusing upon changing parent behavior. More information regarding the importance of timing and chronicity of parent invalidation as part of these interactions would likely be helpful questions to investigate in an expanded program of research in this vein.

4.4 Limitations

The clearest limitation of the present study was a small sample size. Explorations of the data for the dual purpose of both better understanding the patterns present and to estimate what may be observed in a larger study were conducted with an effort to balance probing the data as would be informative, while also maintaining some conservatism in deference to the very limited sample. All analyses should be interpreted with extreme caution and are intended to provide a basis for further investigation of the questions at hand, not to speak directly to the patterns that may be operating in the population in general.

Beyond the small size of the sample and subsequent lack of ability to draw supported conclusions based on the findings, another clear limitation of this study was the lack of fathers in the sample. It is quite possible that either PEA or invalidating behaviors could be affected by gender of the parent. Mothers continue to more commonly be the caretakers of children, and as a result attend more activities and appointments with their children. Recruitment of fathers for a larger study may require specific effort to attract their participation. Another limitation is the participation of only one parent of each adolescent. The non-participating parent could orient to the emotions of his/her child very differently, and could influence the emotional development of the child differently, and in some cases likely more. Both of these limitations could be addressed in a larger study or in future study designs, and they do not necessarily diminish the value of the preliminary data presented in this pilot study as it is intended.

Appendix A

Videotaped Discussion Validity Check

Please circle the number which best matches your answer:

How typical would you say the conversation you just had with your child was? In other words, how much was it like or not like other conversations the two of you have had before?

- 1 - We've had other conversations just like this one before.
- 2 - It's somewhat like other conversations we've had before.
- 3 - It's a little bit like other conversations we've had before.
- 4 - It's not much like other conversations we've had before.
- 5 - It's not at all like any conversations we've had before.

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Biography

Jacqueline E. Donnelly was born in Asheville, NC, on November 2, 1974. She attended and subsequently graduated Magna Cum Laude from Barnard College of Columbia University in May 1997, with a B.A. in Biology. While working for a nuclear cardiologist, Jackie was an author on journal articles titled "Psychological stress and arrhythmogenesis: epidemiology, pathophysiology, and therapeutic implications", and "A new pattern of cardiac events emerges following the World Trade Center attack". She was then accepted into the Clinical Psychology graduate program in the Department of Psychology and Neuroscience at Duke University, initially in the health psychology track. Within a year she left the health track and turned her attention to the treatment of psychopathology, particularly suicide and self-harm, personality disorders, and the treatment of adolescents. She received her M.A. in clinical psychology from Duke in May 2007 and was an author on articles titled "Ethical guidance for therapy with adolescents: communication" and "Communication and assessment in the ethical treatment of adolescents"; as well as being an author on a book chapter titled "Cognitive therapy for comorbid depression: borderline personality disorder". She received an NIH Ruth L. Kirschstein National Research Service Award Predoctoral Fellowship, a Duke University Graduate Summer Research Fellowship, and several Claire Hamilton Conference Travel Awards and Duke University Graduate Conference Travel Fellowships while at Duke.