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**Exploring the Interpersonal Consequences of Adverse Childhood Experiences in College  
Students**

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## Abstract

The Interpersonal Process Model of Intimacy characterizes intimacy as dyadic interpersonal interactions in which vulnerable behaviors are displayed and reinforced by suitable listeners. We posited that Adverse Childhood Experiences (ACEs) would foster avoidance of vulnerable speaker behaviors in dyadic exchanges, as seen in self-concealment, and that lower levels of ACEs would be associated with more self-disclosure. Correspondingly, we examined whether self-concealment and self-disclosure simultaneously mediated the relationship between ACEs and relationship closeness in college students. Results revealed that ACEs were significantly associated with more self-concealment only. After removing self-disclosure from the model, self-concealment mediated the relationship between ACEs and relationship closeness. Self-concealment mediated the relationship between ACEs and fear of intimacy. Together, the present investigation adds to existing literature by pointing to the interpersonal consequences of ACEs and a potential mechanism maintaining this relationship, and the potential for therapies targeting inflexible responding patterns to enhance functional intimacy-related repertoires.

*Keywords:* Adverse Childhood Experiences; Self-Concealment; Intimacy; Relationship Closeness; Fear of Intimacy

## **Exploring the Interpersonal Consequences of Adverse Childhood Experiences in College Students**

Intimacy is a quality ascribed to relationships with patterns of closeness, communication, and trust (Timmerman, 1991). The formation and maintenance of intimate relationships are vital human needs (Bretherton, 1992), facilitated by the perception of closeness, understanding, and affection (Vangelisti & Beck, 2007). Having close relationships is associated with increased psychological well-being and physical health (Ditzen et al., 2008; Frost, 2012; Golub et al., 2011; Haslam et al., 2015; Kiecolt-Glaser et al., 2010). Conversely, difficulties creating and maintaining intimacy in new relationships are correlated with decreased mental health and overall well-being (Lakey & Tanner, 2012; Tew, et al., 2012; Whisman & Robustelli, 2016). Low levels of intimacy also decrease relationship satisfaction across various types of relationships, such as romantic, platonic, and familial relationships, as well as the therapeutic alliance (Haworth et al., 2015; Laurenceau & Barrett, 1998).

Reis and Shaver (1988) provided an early conceptualization of interpersonal intimacy processes using concepts from social and cognitive psychology. This Interpersonal Process Model of intimacy (IPM; as named in Laurenceau et al., 1998) posited that personal feelings are communicated in accordance with one's social motives, and the repetition of such interactions are what lead to feelings of closeness (Reis & Shaver, 1988). The authors' unique contribution to furthering and understanding the process of developing intimacy lies in the necessity of an exchange between the speaker and the listener. To foster intimacy, the speaker must express emotion (not facts), the listener must respond, and the speaker must then interpret that response as affirming to their "inner self" (Reis & Shaver, 1988, p. 376) with understanding, care, and validation, specifically. Throughout this dyadic process, events are influenced by current social

motives and each partner's cognitive interpretive filter. Social psychologists have further tested this approach experimentally and examined its utility in the context of couples counseling (Laurenceau et al., 1998), placing a particular emphasis on the cognitive mechanisms that build intimacy.

Cordova and Scott (2001) later expanded the Interpersonal Process Intimacy model by reconceptualizing intimacy as a dyadic interaction in which vulnerable behaviors are displayed by a speaker while a listener displays a reinforcing response. Vulnerable behaviors are defined as speaker or listener verbal behavior that could be punished or reinforced in close relationships. The last step of this sequence is followed by the speaker's perceived responsiveness of the listener's response. Thus, closeness in intimate relationships depends on the quality of reciprocal communication, including vocal and non-vocal behaviors (Laurenceau et al., 1998; Reis & Shaver, 1988). For example, when disclosing a secret to a loved one, the listener in this relationship could respond by expressing empathy towards the speaker's verbalized experience (i.e., "Wow, that sounds difficult"). Assuming this exchange follows the aforementioned steps, the speaker would be more likely to engage in these behaviors in future interactions with this person if the speaker perceives the listener's response as reinforcing (Haworth et al., 2015). Repeated patterns of such an exchange could foster a close intimate relationship and would likely be accompanied by feelings of closeness. In contrast, punishment of vulnerable behaviors in dyadic exchanges would decrease the likelihood of displays of vulnerability in the future, mitigating intimacy in ensuing relationships.

A recent Contextual Behavioral Science (CBS) interpretation of the IPM increases the depth and precision of the understanding of intimate behaviors through the conceptualization of intimacy as a set of functional relations nested in interpersonal contexts (Kanter et al., 2020). The

CBS interpretation recognizes three types of functional relations within the IPM. Kanter et al. (2020) described these relations as “(a) non-verbal emotional expression (or ‘showing yourself’) with safety, (b) verbal self-disclosure (or ‘expressing yourself’) with validation, and (c) asking with giving” (p. 78). An integral part of this approach is that intimate exchanges are under contextual control, and thus awareness of antecedents (e.g., being alone or in a group), interpretation of these from a person’s unique learning history (such as childhood experiences) the person themselves, and the speaker’s awareness of the listener’s responsiveness are included in understanding development and maintenance of intimate interpersonal relations (Kanter et al., 2020). While in vivo interpersonal interactions are frequently non-linear, the functional relations and sequence of this model is a useful framework for studying intimacy. An advantage of Kanter’s (2020) approach is that it provides a clinically relevant description of intimacy that enables researchers and clinicians to target behaviors that can be used to understand intimacy across a range of contexts. Using this model in the current study adds a functionally based theoretical approach to intimate behaviors and mechanisms that may influence behavior in interpersonal contexts.

### **Fear of Intimacy**

Fear of intimacy has been defined as “the inhibited capacity of an individual, because of anxiety, to exchange thoughts and feelings of personal significance with another individual who is highly valued (Descutner & Thelen, 1991, pg. 219).” For relational exchanges to build intimacy, the IPM posits that a speaker must perceive a listener’s response as caring and validating. Reinforcement of self-disclosure can increase the quality of speaker disclosures and increase feelings of relationship closeness (Haworth et al., 2015). However, a fear of intimacy is negatively related to a speaker’s perceived responsiveness, such that a speaker with a high fear of

intimacy has difficulties discerning caring and validating responses (e.g., Manbeck et al., 2020). This may lessen or negate the intended reinforcing value of the response instead of increasing the likelihood of future self-disclosure, in line with research suggesting that those who fear intimacy also exhibit less self-disclosure (Manbeck et al., 2020). Given the importance reinforcement has in facilitating the behaviors involved in intimate exchanges that foster closeness, this fear may stem from possible future punishment of vulnerability, such that one would avoid “having intimacy” and avoid behaviors required to facilitate intimate relationships.

### **Adverse Childhood Experiences**

The concept of Adverse childhood experiences (ACEs) has been used to describe potentially traumatic events experienced before the age of 18 that serve as risk factors for poor mental and physical health in adulthood (Kalmakis & Chandler, 2013). Adverse childhood events have historically included occurrences like emotional, physical, and sexual abuse, parental neglect, and familial dysfunction (e.g., witnessing intimate partner violence; Anda et al., 1999; Dong et al., 2004; Felitti et al., 1998). More recently, researchers have accentuated other developmental stressors (e.g., peer victimization, community violence, parental death) with the potential to negatively influence physical and psychological health (Finkelhor et al., 2013). Great interpersonal consequences can also stem from ACEs, such as fear of intimacy, risky sex behavior (e.g., condomless sex, multiple sexual partners; Roemmele & Messman-Moore, 2011), and lower relationship quality (Reyome, 2019; Schütze et al., 2020). However, multifinality should be considered when predicting outcomes, as many moderating and mediating factors can ameliorate or protect against these harms.

At a conceptual level, ACEs may involve the punishment of vulnerable behaviors that would otherwise promote intimacy. When children receive positive listener responses to displays

of vulnerability, this can increase the chance of that behavior occurring again and generalize to vulnerability across varying contexts (Collins & Feeney, 2004). For example, in emotional and psychological abuse, adults may ignore a child's thoughts and feelings, or express their invalidity (Roth, 2004) – punishing listener responses. In this way, ACEs can punish authentic expressions, reducing the likelihood that vulnerable behaviors will occur in the future. Childhood interpersonal trauma is associated with an increased sensitivity to punishment cues and decreases in responsiveness to reward cues (Miu et al., 2017; Pechtel & Pizzagalli, 2013), possibly exacerbating this effect. When a child's vulnerable behavior is under aversive control during development, self-established rules may develop which preclude intimacy (Törneke et al., 2008). Similarly, within the IPM, the lack of responsiveness to vulnerable behaviors that act as antecedents to further intimate interaction would be likely to decrease. Such patterns of behavior are persistent and difficult to overcome even in adulthood (Campbell et al., 2016; Davis, & Petretic-Jackson, 2000; Smetana et al., 2009).

### **ACEs, Self-concealment, and Self-disclosure**

Negative consequences and maladaptive learning surrounding interpersonal interactions through ACEs may precipitate experiential avoidance of intimacy, leading to poor interpersonal processes, such as generalized self-concealment, poor listener responsiveness to intimate vocalizations, lack of relationship closeness, and a fear of intimacy. Self-concealment is the act of concealing distressing or negative information about the self from others (Larson et al., 2015). In many ways, self-concealment converges with Cordova and Scott's (2001) definition of vulnerable behaviors (i.e., where behavior is “open to censure or punishment by another person” (Cordova & Scott, 2011, p. 76), wherein content may have been punished in the past. For example, authoritarian mothering styles result in more self-concealment by children (Hartman et



al., 2015). Self-concealment has been positively associated with behavioral inhibition, wherein people who self-conceal are more sensitive to cues of punishment (Ornstein, 2009). Instances of childhood maltreatment have been associated with self-concealment on several occasions (Chung & Chen, 2020; Sease et al., 2021). This is in line with a CBS view of self-concealment, in which withholding vulnerable verbalizations is a maladaptive method of dealing with personal distressing experiences (Masuda et al., 2017). It is of note that there are also contexts in which self-concealment may be under aversive control as a healthy, protective behavior, such as communication with an abuser in childhood, and this paper focuses on outcomes across relationships in adulthood in which a broad, flexible repertoire of relationship behaviors can be typically adaptive.

From a behavioral perspective, intimacy is the product of exchanges, with the reinforcement of vulnerable behaviors being a necessary component. Positive listener responsiveness to self-disclosure has been shown to increase self-disclosure, suggesting that it functions as a reinforcer to the speaker (Haworth et al., 2015). Conversely, past punishment may affect a listener's ability and willingness to respond in a way that is reinforcing. Having one's own vulnerability reinforced models the skills involved in being a receptive listener and reinforcing others' disclosures (Khan & Cangemi, 2001). Without this learning, it may not be probable to learn behaviors that allow for the appropriate reinforcement of vulnerability. Therefore, ACEs that involve punishing vulnerability would provide models of invalidating responses, which may then be displayed in the interpersonal repertoire of the survivor.

### **Current study**

While fear of intimacy and relationship closeness following trauma have been studied extensively, less is known about the processes and mechanisms by which this occurs, and even

less is known within the framework of CBS. Given that the IPM conceptualizes intimacy as the product of verbal exchanges which require a speaker's vulnerability, a listener's reinforcement, and the speaker's perception of reinforcement, we propose that ACEs may involve the punishment of vulnerable behaviors and decrease the likelihood of behaviors that build intimacy. As such, we hypothesized that self-concealment and self-disclosure would simultaneously mediate the relation between adverse childhood experiences and relationship closeness. In other words, we expected ACEs to be negatively associated with self-disclosure and positively associated with self-concealment. In turn, self-disclosure was theorized to predict more relationship closeness, while self-concealment would predict less relationship closeness. Additionally, a post hoc analysis was run, in which we expected self-concealment would mediate the relationship between ACEs and fear of intimacy.

## **Method**

### **Participants**

This study collected two samples of participants. The first sample consisted of undergraduate students recruited from a Midwestern university in the United States. The second sample was recruited via social media (e.g., Facebook, Instagram) wherein participants were able to complete the survey on their own device (i.e., computer, smartphone). To be eligible for the study, participants had to be 18 years old and fluent in English. Non-university participants ( $n = 20$ , .07%) were excluded for a comparatively low sample size and significant deviation from the university sample in demographic information. After exclusion of 73 (26.4%) participants for incorrect answers on over 50% of attention checks (e.g., "select strongly disagree for this item"), duplicate entries, or responding to less than 75% of survey questions, the sample consisted of 203 participants. As shown in Table 1, participants' average age was 19.18 ( $SD = 2.64$ ).

Participants predominantly reported as female (83.3% female, 12.3% male, 3.9% non-binary, 0.5% unsure) and White (86% White/Caucasian, 4% Black/African American, 3% Bi-racial, 4% Asian or Asian American, 1% American Indian or Alaskan Native, 2% Other).

## **Procedure**

To test the authors' hypotheses, this study used a cross-sectional design asking participants to provide responses at one time point. After researchers received approval from an ethical board, participants were provided informed consent and completed a battery of self-report questionnaires online. University participants were compensated with partial class credit, and non-university participants were not compensated. This study was pre-registered at Open Science Framework (link removed for masked review).

## **Measures**

### ***Demographic Information***

A demographics questionnaire was used to measure age, gender, ethnic background, and college class.

### ***Intimacy in Close Relationships***

Two measures were used to assess current intimate behaviors and feelings surrounding close relationships. In both measures, close relationships were not limited to sexual or romantic relationships; instructions for the scales used included examples such as platonic, familial, and romantic relationships.

#### **The Unidimensional Relationship Closeness Scale (Dibble et al., 2012).**

This is a 6-point scale assessing relationship closeness. Participants indicated how much they agree (1 = Strongly disagree to 7 = Strongly agree) with 12 statements reflecting various aspects of closeness such as subjective feelings of closeness and time spent together. One

example of sample items is “*I consider my \_\_\_\_\_ when making important decisions.*” A total score indicative of closeness was calculated by summing responses to the items, with higher scores indicating greater feelings of closeness. Internal reliability was acceptable at  $\alpha = 0.94$ .

### **The Fear of Intimacy Scale (Descutner & Thelen, 1991).**

This is a scale that evaluated anxiety about close relationships. Participants rated their anxiety levels in response to 35 statements reflecting different behaviors and wants people may experience in a close relationship. Items were rated on a 5-point scale with responses ranging from 1 - Not at all characteristic of me to 5 - Extremely characteristic of me. Sample items include statements such as “*I would feel uncomfortable telling O about things in the past that I have felt ashamed of.*” A total score indicative of a fear of intimacy was calculated by reverse scoring indicated items and then summing all responses, with higher scores reflecting greater fear of intimacy. Good internal reliability was shown in this study,  $\alpha = 0.93$ .

### ***Adverse Childhood Experiences***

Instances of ACEs were assessed using the Adverse Childhood Experiences Questionnaire (Felitti et al., 2019). Using a 10-item dichotomous scale (0 = No, 1 = Yes), participants were asked to report if they had experienced violence, abuse or neglect, witnessed violence, or had a family member die by suicide before the participant reached the age of 18. Items included statements such as “*Did a parent or other adult in the household often: Swear at you, insult you, put you down, or humiliate you?*” Summing items produced a composite score, with higher scores indicating more adverse childhood events ( $\alpha = 0.79$ ).

### ***Self-disclosure***

Vulnerable verbal behaviors were assessed with two self-report measures. The first is the Emotional Self-Disclosure Scale (ESDS; Snell et al., 1988), which evaluated how comfortable

people are disclosing varied emotions and emotional situations. Originally designed to assess disclosure to therapists, it was modified for “those closest to me” for this study. Participants rated 40 items relating to emotional states (e.g., “*Times when you felt envious*”), indicating on a 5-point scale the extent to which they had discussed these with someone close to them (0 - I have not fully discussed this topic with those closest to me to 4 - I have fully discussed this topic with those closest to me). Eight subscales with 5 items each assess disclosure of particular emotions, namely, depression, happiness, jealousy, anxiety, anger, calmness, apathy, and fear. Items in each subscale are summed for a total score, with high scores indicating high self-disclosure of that emotion. The eight subscales are summed for an overall score, with high scores indicating high self-disclosure ( $\alpha = .97$ ).

### ***Self-concealment***

The second measure is the Self-Concealment Scale (SCS; Larson & Chastain, 1990), which measures the tendency of participants to conceal distressing or negative information about themselves. Participants rated statements (e.g., “*There are lots of things about me that I keep to myself*”) on a 5-point Likert scale ranging from 1 - Strongly disagree to 5 - Strongly agree. The SCS has demonstrated good internal reliability ( $\alpha = .83$ ; Larson & Chastain, 1990) and retest reliability ( $r = .74$ ; Cramer & Barry, 1999). Items are summed to provide a single-factor score, with higher scores indicating more concealment ( $\alpha = .90$ ).

### **Analytic Procedure**

To test this study’s hypotheses, multiple statistical procedures were used. Pearson’s correlation analysis examined the relationships among proposed predictor, mediating, and outcome variables (see Table 2). Then, a parallel mediation model was performed to evaluate whether self-disclosure and self-concealment simultaneously mediated the relationship between

ACEs and relationship closeness (H1; see Figure 1 for path model). A simple mediation was performed to test whether self-concealment had a mediational effect on the negative association between ACEs and relationship closeness (H1). All analyses listed herein were performed in SPSS version 25 (IBM Corp, 2017) and mediation analysis was executed using the PROCESS Macro (Model 4; Hayes, 2017). A critical value of .05 was used to determine statistical significance.

## Results

### Hypothesis One

SPSS Process macro model number 4 was used to assess hypothesis one. In accordance with MacKinnon and Luecken's (2008) method of mediation, self-disclosure and self-concealment were regressed on ACEs. Results showed ACEs were positively associated with self-concealment ( $b = 1.01, SE = 0.29, t = 3.49, p < .000$ ) but not associated with self-disclosure ( $b < -0.00, SE = 0.03, t = .15, p = .881$ ). Considering ACEs were not significantly correlated with self-disclosure, this variable was removed from the model. Next, a simple mediation was performed with ACEs predicting relationship closeness through self-concealment only. This model revealed ACEs were still positively correlated with self-concealment ( $b = 1.08, SE = 0.29, t = 3.77, p < .000$ ). Further, while controlling for the effects of ACEs, self-concealment was negatively associated with relationship closeness ( $b = -0.29, SE = .10, t = -2.29, p = .004$ ).

Bootstrapping procedures were used to compute standardized indirect effects for each of 10,000 bootstrapped reiterations. The bootstrapped unstandardized indirect effect for the model indicated mediation when self-concealment was the only mediator (95% CI [-0.61, -0.09]). Therefore, the indirect effect was significant, indicating statistical mediation by self-concealment in the relation between ACEs and relationship closeness (see Figure 1 for path model).

## Exploratory Analysis

Given the findings on relationship closeness and its inverse relationship with fear of intimacy in the literature, a second simple mediation model was performed wherein ACEs were regressed on fear of intimacy while self-concealment served as the mediator. As previously reported, as the number of ACEs increased, so did the amount of self-concealment ( $b = 1.07$ ,  $SE = 0.28$ ,  $t = 3.81$ ,  $p < .000$ ). Likewise, self-concealment was positively associated with participants' reported fear of intimacy ( $b = 0.86$ ,  $SE = 0.17$ ,  $t = 5.17$ ,  $p < .000$ ), while controlling for the effects of ACEs. Bootstrapping estimates indicated that the indirect effect of ACEs predicting fear of intimacy through self-concealment was significant (95% CI [0.38, 1.55]). These results suggest that self-concealment statistically mediated the relationship between ACEs and fear of intimacy (see Figure 2 for the path model).

## Discussion

### Review and Implications

This cross-sectional investigation examined how adverse events experienced in childhood influence intimacy in close relationships in adulthood. We tested whether self-concealment and self-disclosure had a mediational effect on the anticipated negative association between ACEs and indicators of intimacy. ACEs were positively correlated with self-concealment but not self-disclosure. In turn, it was found that only self-concealment mediated both the relationship between ACEs and relationship closeness, and the relationship between ACEs and fear of intimacy. These findings converge with literature suggesting that adverse events in childhood are associated with poor relationship outcomes (e.g., future intimate partner violence, decreased relationship satisfaction, and loneliness; Mair et al., 2012; Merz & Jak, 2013; Poole et al., 2018; Walker et al., 2009).

Much attention has been given to the role of ACEs in predicting relationship difficulties; however, there is a dearth of research exploring how these difficulties may come about in direct relation with verbal communication involved in these events. Punishment of vulnerable behaviors during difficult childhood experiences may result in relationship-oriented behaviors under aversive control, such as self-concealment. In turn, inflexible responding may arise in contexts that select for intimacy. Fear of intimacy resulting from the punishment of vulnerable behaviors and a lack of new intimate experiences may then affect relationship satisfaction through engagement in self-concealment, which could impede intimate interactions. Crucially, the functional changes occurring in response to difficult childhood experiences may be particularly important in terms of explaining the relationship between ACEs and intimacy. The importance was demonstrated in the current study through the absence of a direct effect between adverse childhood events and measures of intimacy.

It is possible that non-significant mediation by self-disclosure was impacted by the fashion in which self-disclosure was measured. The ESDS assesses participants' frequency and form of disclosure. However, not all self-disclosure is functional, wherein people may self-disclose in inappropriate contexts, with inappropriate content, and/or to manage unwanted emotions without leading to workable solutions. Investigation into this topic could additionally point to the quality and health of relationships as well as closeness, and show consistency with the behavioral framework of intimacy.

Practically, our significant results may indicate a need to promote intimacy-related behaviors by targeting contexts outside of potentially abusive home experiences, with a focus on psychological inflexibility and basic behavioral processes involved in an individual's barriers to intimacy (e.g., fusion with rules about vulnerability, deficits in tracking; Eilers, 2019). Clinicians



can broaden clients' intimacy-building repertoires by reinforcing vulnerable responses, client reinforcement of vulnerability, and client recognition of others' reinforcement, using the IPM to functionally categorize behaviors for intervention (Vila et al., 2020). Work on self-disclosure and concealment, of direct concern to communication in and outcomes of therapy (Baumann, 2014; Farber et al., 2006; Fedde, 2009), could also be an avenue of fostering the therapeutic alliance, which some have argued can be the primary unit of analysis in therapy (Sandoz, 2020).

### **Limitations and Future Directions**

Interpretation of this study should include consideration of several limitations. Our sample was a demographically homogeneous convenience sample. While traumatic experiences occur universally, various demographic characteristics predispose different people groups to childhood adverse experiences. As such, longitudinal data from diverse populations should be examined to augment current findings. Since this study also recruited a college-student sample composed of mostly White women, it remains unclear whether these results would replicate in a more diverse sample, and forthcoming research will be needed to assess the associations among these variables in clinical populations. The design was cross-sectional, which does not allow for establishment of causal relations, and limits the ability to probe into the length of experiences and its impact on relationship closeness and fear of intimacy. Future research should consider multiple time point studies to capture added information that would increase our understanding of the current dynamics.

Additionally, the self-report measures did not match components of Kanter's (2020) model one to one. Yet results from the measures used can still be interpreted through a CBS lens as this paper provides a functional conceptualization of intimacy as its theoretical basis and in interpretation and includes proposed mechanisms of action which may inform future CBS

research not limited by the inherent flaws of self-report or with an updated measure. The ACEs scale used in this study has also been criticized as an assessment of childhood trauma for being misused as a clinical screener or diagnostic tool, not measuring the breadth of potential childhood traumas, and ignoring systematic or racial inequalities contributing to generational trauma (e.g., Anda et al., 2020; Helton et al., 2022; McLennan et al., 2020). Studies focused on examining the long-term sequelae of childhood trauma should consider using a more recent version of the scale that includes items assessing peer victimization, food insecurities, and housing instability in addition to the original items (see Merskey et al., 2017). Consequently, using ACEs as a proxy for childhood trauma may have inherent limitations given its emphasis on topography, and therefore functional changes must be assumed. Future development of measures that capture the function of intimacy-related behaviors could allow for meaningful interpretation of results that link childhood experiences and adult intimacy, as could clinically based studies.

Future research should use an experimental design which creates conditions that may elicit self-concealment and focus on novel assessments of self-concealment. For example, physiological measurement could better investigate self-concealment as behavior under aversive control or in relation to fear responses exhibited by those with past ACEs. In recent years, much attention has been given to physiological arousal as a symptom of post-traumatic stress disorder and related situational fear, making it a promising avenue of study (Acheson et al., 2014; Hinrichs et al., 2017; Wahbeh & Oken, 2013). Further objective measures could also include direct observation of dyadic exchanges, including professional analysis of the function of disclosure and concealment. These behavioral measures and others would be in line with the behavioral approach of CBS and, further, overcome limitations of retrospective self-report. More accurate self-report measures such as ecological momentary assessments could additionally

capture temporal, context-sensitive data. Future inclusion of self-report measures to investigate past experiences could ask participants about verbal and non-verbal communication related to previous trauma rather than simply whether a traumatic event occurred. This would allow for the study of past punishment of vulnerability and of these exchanges in relation to varying types of ACEs.

### **Conclusion**

In review, we proposed that ACEs that involve punishment of vulnerability can decrease the likelihood of vulnerable behaviors. As such, this study sought to extend research in this area by examining relationship quality following trauma through speaker-listener behaviors as potential mediators including self-disclosure and self-concealment. Results showed that self-concealment, but not self-disclosure, mediated the relation between ACEs and relationship quality. These results indicate that deficits in or avoidance of verbal behaviors in the Interpersonal Process Model of intimacy could be a mechanism by which ACEs lead to poor relationship quality in adulthood. There is a need to explore punishment or lack of reinforcement of vulnerable verbal behaviors in childhood as a precursor to current deficits affecting relationship quality.

**Conflict of Interest Statement**

The authors certify that they have no affiliations with or involvement with any entity with financial interest in the materials discussed in this manuscript

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