2020-07-29

Childhood Trauma and Attachment Theory: Estimating a Growth Curve Relationship Between Adverse Childhood Experiences and the Therapeutic Alliance

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Curve Relationship Between Adverse Childhood

Experiences and the Therapeutic Alliance

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A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

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ABSTRACT

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The therapeutic alliance is a core element of successful treatment in therapy. Recent literature has explored variables that predict the alliance at various time points during therapy, but few studies have explored how the alliance develops over time and the factors that influence its rate of change. The current study addresses these questions by estimating latent growth-curve models to analyze how male and female partners' alliance scores develop over time and how adverse childhood experiences (ACEs) impact the development of the alliance during the first six sessions of therapy. Results from these analyses show that neither men nor women's ACEs had a significant effect on the rate of change in the alliance. A discussion of the attachment implications of these findings, as well as the limitations of this study and potential directions for future research are then presented.

ACKNOWLEDGEMENTS

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Childhood Trauma and Attachment Theory: Estimating a Growth Curve Relationship

Between Adverse Childhood Experiences and the Therapeutic Alliance

The therapeutic alliance is one of the most researched aspects of individual and couple therapy. While the alliance was pioneered as the bond between therapist and client, and agreement on the therapeutic tasks and goals (Bordin, 1979), more recent literature has expanded the concept of the alliance to include complex systemic and attachment structures that influence how therapists and couple systems relate to one another (Pinsof, 1994; Friedlander et al., 2006; Johnson et al., 2018). Despite its complexity, a strong working alliance between therapist and client has been considered the most frequently studied process variable in the psychotherapy literature (Davis et al., 2012) and has been estimated to account for at least 4% to 7% of the therapeutic change that occurs during individual therapy (Owen et al., 2014; Wampold, 2005). A recent meta-analysis of the alliance-outcome relationship in couple and family therapy indicates that the alliance plays as large if not larger role in systemic therapy than individual therapy (d = 0.6; Friedlander et al., 2018).

While the alliance-outcome relationship is well-established, we know little about what predicts a strong alliance and even less about how the alliance develops across time. While some exploratory work has been done to examine demographic, individual, and relational factors as predictors of the therapeutic alliance in couple therapy (Anderson et al., 2019; Davis et al., 2012), few studies have focused on the process of alliance formation over time (Behn et al., 2018). One promising area of alliance research is the largely unexplored role of adverse childhood events (ACEs) in predicting the alliance (Anderson et al., 2019). Congruent with findings that ACEs are associated with insecure attachment for a clinical population (Murphy et al., 2014), ACEs have been shown to impact the ability to form and maintain relationships in

general, including the therapeutic relationship (Banford Witting & Busby, 2018; Bigras et al.,
2017; Murphy et al., 2014; Anderson et al., 2019). I suspect that as individuals experience
traumatic experiences during their formative years, those experiences inform internal working
models of attachment that impact relationship development, and specifically, the therapeutic
relationship. This study seeks to replicate and expand upon recent literature by examining how
adverse childhood experiences influence both the initial quality of the alliance as well as how the
therapeutic relationship progresses over time.

<div align="center">**Literature Review**</div>

Therapeutic Alliance

The therapeutic alliance is a broad construct that conceptualizes reciprocal affect between
therapist and client, patient-therapy agreement, and collaboration (Murphy & Hutton, 2018).
Likewise, Bordin (1979) defined the alliance as the bond between the therapist and client, as well
as agreement about the goals and tasks of therapy. The bond between therapist and client refers
to the sense of connection and attachment; goals of therapy refer to the degree of agreement and
comfort between therapist and client regarding the goals for therapy; tasks of therapy refer to the
degree of agreement and comfort between the therapist and client regarding their respective
therapy tasks (Pinsof et al., 2008). While these aspects of the alliance are relevant in both
individual and relational therapy, Pinsof (1994, 1995) accounted for the greater complexity of
working with multiple individuals by adding a "within-system" and "between-system"
conceptualization of alliance. Pinsof's addition of the within-system and between-system aspects
of the therapeutic alliance helped explain how a therapist could have a strong alliance with each
member of a couple even when partners disagree on the meaning, value, and purpose of therapy.
With a strong between-system alliance, the therapist develops an affective, effective, and

congruent relationship with each member of the family and the family as a group. With a strong within-system alliance, family members agree with each other on the goals and tasks of therapy, have a shared sense of purpose, and demonstrate respect for each other's perspectives (Friedlander et al., 2006).

Attachment Theory

The current work conceptualizes attachment as a vehicle for relationship formation, and specifically, the development of the therapeutic alliance. Attachment theory provides a framework to view client and therapist interactions, including how a secure working relationship forms in therapy (Smith et al., 2010). Foundational researchers developed attachment theory as a way to conceptualize how human beings express the need for belonging, asserting that attachment figures like parents or other caregivers play a role in the development of internal working models of attachment that inform future relationships (Bowlby, 2008; Mikulincer & Shaver, 2007). During moments of relational threat or distress, existing attachment structures may activate, leading to either secure or insecure attachment behaviors within relationships. For this reason, the therapeutic alliance, like many other relationships, may be impacted by clients' previously-established internal working models of attachment. Smith and colleagues (2010) put it well, explaining that "the idea is that clients project their internal working models onto the therapist and the therapist-client relationship, such that client attachment patterns affect how the two parties interact with each other." They continue by asserting that clients with secure attachment patterns may be more likely to engage in the challenging self-examination and disclosure that help facilitate therapeutic change. Thus, client and therapist attachment structures likely inform the formation of a therapeutic relationship, which may then influence the likelihood of therapeutic progress (Martin et al., 2000).

Likewise, attachment theory expands the view of predictors that have yet to be explored in the therapeutic alliance literature. Drawing from a sample of 692 individuals in the general population, Salokangas and colleagues (2018) utilized structural equation modeling to explore the how sexual abuse, physical abuse, emotional abuse, emotional neglect, and physical neglect during childhood impact individuals' perception of other's attitudes toward them. They found that adult participants who reported these adverse childhood experiences were more likely to believe that other people view them negatively. This supports the perspective that traumatic experiences with attachment figures during childhood can contribute to insecure attachment schemas in future relationships. Despite the impressive body of literature that notes the detrimental effects of adverse childhood experiences throughout the life course, few studies have explored how ACEs impact relationship formation in adulthood (Bigras et al., 2017; Banford Witting & Busby, 2018; Anderson et al., 2019). Drawing from attachment theory as a vehicle for relationship formation, the current work examines how childhood adversity may impact the development of individuals' relationships with their therapist.

Importance of the Therapeutic Alliance

Developing a trusting relationship with a therapist is important for therapeutic change. For example, a strong therapeutic alliance has been connected to improved treatment outcomes and a lower likelihood of dropout in both individual and couple therapy (Sharf et al., 2010; Glebova et al., 2011). It has been shown to predict progress in resolving marital distress in a clinical sample (Knobloch-Fedders et al., 2007), improved well-being for couples in therapy (Kuhlman et al., 2013), and is more predictive of well-being than therapists' experience level (Owen et al., 2014). In a sample of 158 couples attending therapy, Owen and colleagues had clients fill out the Outcome Rating Scale (ORS; Miller et al., 2003) and Session Rating Scale

(SRS; Duncan et al., 2003) at the end of each session to test therapist factors that contributed to therapy outcomes. They found therapist variables (experience, alliance, etc.) accounted for 8% of outcome variance; however, their results showed that therapist experience accounted for roughly 25% of the therapist effect in clients' outcomes, while therapist alliance quality accounted for 50% of the therapist effect in therapy outcomes (Owen et al., 2014). Simply put, the therapeutic alliance accounted for roughly 4% of outcome variance, while therapist experience only accounted for 2% of the variance. This is slightly lower, but consistent, with previous research findings that the therapeutic alliance contributes to 5% of clinical outcome variance (Wampold, 2005). Another study demonstrated how split alliances (one partner experiencing a strong alliance while the other does not) are associated with higher levels of client dropout in couple therapy (Jurek et al., 2014). These studies provide evidence for the importance of the therapeutic alliance and how its development contributes to positive outcomes in therapy.

Predictors of the Alliance

Despite the importance of the alliance in predicting therapeutic outcomes, much is unknown about how the alliance is developed and maintained during therapy. Researchers and therapists explore predictors of the alliance to understand how the alliance forms, how to repair ruptured alliances, and which factors play the largest part in the development of the alliance. Some potential factors include therapists' or clients' gender, family of origin, race, ethnicity, differentiation of self, religion, attachment style, modality, and experience (Anderson et al., 2019; Davis et al., 2012). In studying the alliance, many studies have identified therapist factors and client factors that contribute to successful alliance development. Each of these categories of predictors will be reviewed.

Therapist Characteristics

The therapist contributes significantly to the development of the alliance. Therapist factors that contribute to the therapeutic alliance have been shown to account for greater variance than other factors (Davis et al., 2012), possibly indicating a complex interaction between therapist and other factors. However, a growing body of literature is dedicated to understanding how therapists influence the alliance with their clients. Some therapist characteristics, including gender (Werner-Wilson et al., 2003), attachment style (Wittenborn, 2012), and differentiation of self (Bartle-Haring et al., 2016), have been presented as therapist characteristics that influence the alliance in both individual and couple therapy. Interestingly, research on the influence of therapists' differentiation-of-self on the alliance has been inconclusive (Bartle-Haring et al., 2016). A recent clinical study found that therapists' differentiation was weakly associated with a more negative alliance with clients. The authors explain that this may be due to a matching effect; therapists with lower differentiation scores may relate to clients more effectively (Bartle-Haring et al., 2016). Another potential explanation is that differing levels of differentiation between therapist and client may alter client's initial perceptions of the therapist (Knobloch-Fedders et al., 2004), thus impacting the quality of the therapeutic alliance.

Despite the surprising findings on the impact of differentiation, therapists' secure attachment is related to a stronger alliance in couple therapy in both clinical samples and by self-report for some therapists (Wittenborn, 2012; Yusof & Carpenter, 2016). In a sample of seven therapists practicing emotionally-focused therapy (EFT) with couples, Wittenborn (2012) found that therapists with insecure attachment styles experienced more split alliances, as reported by their clients. One explanation of this finding is that new therapists may be more likely to develop stronger alliances with clients whose internal working model of attachment is similar to their

own. Other researchers have found secure attachment to have a positive influence on the emotional connection dimension of the therapeutic alliance (Yusof & Carpenter, 2016; Friedlander et al., 2006). In a series of qualitative interviews with 11 therapists, Yusof and Carpenter (2016) found that the therapists' self-reported internal working model of attachment were related to their responses to "emotionally charged situations of attachment threat" (p.74). As couple therapy often expedites emotionally-charged moments for some clients, it makes sense that therapists who experience a secure model of attachment would respond to perceived threats to the alliance in ways that facilitate alliance repairs instead of ruptures.

However, research is needed to understand the therapist characteristics that influence the development of the therapeutic alliance. For example, Werner-Wilson and colleagues (2003) found that female therapists seem to be more effective at developing emotional bonds with individual clients, but did not explore potential explanations for the relationship. Other authors have addressed potential explanations for a gendered effect, but with varying results (Bhati, 2014; Behn et al., 2018). In a clinical sample of 92 adult individuals, Bhati (2014) reported a potential "female effect" that led to increased emotional connectedness between therapist and client, regardless of client gender. Behn and colleagues (2018) explored this connection in a clinical sample of 547 adult individuals, reporting that the potential lack of the bond dimension of the alliance for male therapists with female clients may be related to a quadratic growth relationship over time. In other words, male therapists were more likely to experience a significant downturn in their alliance rating during the first three sessions of therapy, followed by positive ratings similar to female therapists after the fourth session. By expanding their model to track the session-by-session development of the alliance, Behn and colleagues were able to explain a previously equivocal finding within the alliance literature. Drawing from this example,

the current study employs longitudinal data to investigate a previously unexplored predictor of the alliance.

Client Characteristics

Despite the importance of therapist characteristics in developing the therapeutic alliance, clients' attitudes, actions, and working models may be the most influential factors in determining therapeutic change (Bohart & Tallman, 2010). There is still much more to learn about client factors that predict development of a strong alliance, but researchers have identified several pre-treatment factors that predict a good working relationship in both individual and couple therapy. These include differentiation of self (Lambert & Friedlander, 2008; Knerr et al., 2011), individual distress (Anderson & Johnson, 2010; Knerr & Bartle-Haring, 2010), relationship satisfaction (Knobloch-Fedders et al., 2004), quality of attachment (Miller et al., 2015; Johnson et al., 2018), and severity of symptoms, insight, and social functioning (Browne et al., 2019). A recent study found that female clients tended to report a higher therapeutic alliance than male clients, suggesting a potential gender effect, while race and age did not significantly predict the alliance (Browne et al., 2019).

In conjunction with an attachment perspective of relationship formation and the therapeutic alliance, recent meta-analyses explored the impact of attachment style as a predictor of alliance formation. Bernecker and colleagues (2014) identified higher levels of avoidant and anxious attachment styles as predictors a weaker therapeutic relationship for individual outpatient therapy. Likewise, clients' secure attachment may be connected to stronger therapeutic relationships in individual clinical samples (Mallinckrodt & Jeong, 2015). Mikulincer and Shaver (2007) expanded Bowlby's (2008) conceptualization of the therapeutic relationship as an attachment bond by adding that "attachment orientations of both clients and therapists can

affect the quality of the client-therapist relationship, and determine clients' reactions to

therapists' interventions and therapists' reactions to clients' disclosures" (p. 239). While there

are many individual factors that contribute to the development of the alliance, preexisting

attachment structures that influence relationship formation patterns may impact the therapeutic

alliance.

ACEs as a Predictor of the Alliance

Childhood trauma may impact aspects of relationship formation, including attachment

style (Murphy et al., 2014; Banford Witting & Busby, 2018). Adverse childhood experiences, or

ACEs, have been linked to a range of negative outcomes according to individuals' self-reported

childhood trauma and current health issues (Kalmakis & Chandler, 2015). These experiences,

first conceptualized by Felitti (1991), included seven specific experiences occurring in a client's

childhood in this study: psychological, physical, or sexual abuse, emotional or physical neglect,

violence against mother, living with household members who were substance abusers, mentally

ill or suicidal, imprisoned, and parental separation or divorce. Adverse childhood experiences

correlate with risky sexual behaviors for women in the general population (Hillis et al., 2001),

behavior disorders in children and adolescents (Burke et al., 2011), self-reported suicidality in a

clinical sample of individual adults (Dube et al., 2001), and symptom complexity for patients

attending sex therapy (Bigras et al., 2017).

Aside from negative health outcomes, ACEs have also been explored as a predictive

influence in negative relationship dynamics. A recent study of a large community sample of

couples connected ACEs' to negative actor and partner effects in couples' sense of relational

instability (Banford Witting & Busby, 2018). Likewise, ACEs are correlated with lower sexual

satisfaction for couples attending sex therapy (Bigras et al., 2017) and insecure attachment styles

in both clinical and community samples (Murphy et al., 2014). In a non-clinical sample of 3,958 couples, Banford Witting and Busby (2018) found that adverse childhood experiences were indirectly related to relationship instability via negative couple communication for both the individual and partner. Other studies have provided evidence for a relationship between ACEs and negative couple dynamics, including increased intimate partner violence in newlywed couples and increased marital strain for individuals in both different-sex and same-sex relationships (Hammett et al., 2020; Donnelly et al., 2018). While there has been little research on the influence of ACEs on the therapeutic alliance, the deleterious effects of childhood trauma on individual wellbeing and relationships may be a vehicle for injuring the therapeutic relationship. Further research is needed to understand how these negative outcomes may serve as mediators in the relationship between ACEs and the trajectory of the therapeutic alliance.

Despite the dearth of research on a potential relationship between adverse childhood experiences and the initial levels and trajectory of the therapeutic alliance, some researchers have recently connected ACEs to the alliance. Anderson and colleagues (2019) utilized a dyadic path analysis to identify potentially significant direct and indirect pathways between ACEs and the therapeutic alliance. In a sample of 351 couples attending couple therapy, these researchers found that male partners' adverse childhood experiences had a direct effect on the alliance, while female partners' ACE score did not. They conclude that while a gendered difference emerged in their findings, it is premature to assume that sex had a significant moderating effect on the relationship; likewise, they urge further research on the mechanisms through which ACEs impact the therapeutic alliance. While the current study does not address the mechanisms or moderators of ACEs' relationship with the therapeutic alliance, it adds to the literature by either supporting or challenging the evidence of ACEs' direct influence on alliance formation.

Trajectory of the Alliance

The current study explores the impact of adverse childhood experiences on both the initial state and ongoing development of the therapeutic alliance in couple therapy. Longitudinal research has examined elements of the trajectory of the alliance in recent years, but the findings are inconsistent. Glebova and colleagues (2011) found that the alliance is relatively stable by the second session of therapy and remains so throughout couple therapy, while other researchers have found that the alliance varies over time in family and couple therapy clinical samples (Escudero et al., 2008; Hook et al., 2014). Inconsistent results like these are often the result of more complex relationships between variables. For example, Bartle-Haring and colleagues (2012) explored how dimensions of the alliance change over time in couple and individual therapy, based on Bordin's (1979) conceptualization of alliance dimensions as bonds, tasks, and goals. In a clinical sample of 96 couples and 52 individuals attending therapy, they found that the initial levels of the alliance and the trajectory of the alliance were moderated by therapy modality (couple versus individual therapy). For example, they found that clients' sense of bonding with their therapist showed linear change and the agreement on goals and tasks dimensions showed a curvilinear trend over the first four sessions of therapy. On the other hand, couples who attended therapy showed lower bonding and less change during the first four sessions of therapy; similarly, couples' agreement on the tasks and goals of therapy did not show a significant change by session four.

This research introduces the importance of the influence of various factors that influence the initial levels and trajectory of the alliance (Anker et al., 2010; Escudero et al., 2008; Hook et al., 2014; Bartle-Haring et al., 2012). Factors like therapy modality, relationship satisfaction, therapist variables, and client variables may impact how the alliance develops over time. As

another example, Anker and colleagues (2010) found that initial alliance levels moderated the trajectory of the alliance in couple therapy; those with a high alliance experienced an increase in the alliance over time and the best outcomes, as did those who reported a moderate initial alliance. However, for those who reported a low alliance during the onset of therapy, the low alliance level remained consistent. Understanding the variables that impact the positive or negative trajectory of the alliance is an important aspect of process research that has yet to be developed.

Mental health professionals who monitor both the between and within-system alliance are more likely to respond with alliance strengthening behaviors when ruptures occur in family therapy (Sheehan & Friedlander, 2015). According to Sotero et al. (2016), therapists are more likely to engage in task and goal-oriented alliance behaviors in the first sessions of therapy, but these behaviors are more likely to decrease by session four. Consistent with this research, Bartle-Haring's (2012) findings that couples who attend therapy are less likely to demonstrate a positive trajectory in the tasks and goals dimension of the alliance may be the result of therapists' lack of alliance behaviors at key points during the development of the alliance. Understanding the formation of the alliance and potential client and therapist factors that influence its development can help therapists modify their treatment in ways to maintain client's emotional connection, engagement, safety, and within-system alliance (Friedlander et al., 2008). This study explores a previously unexamined predicting variable by testing the relationship between adverse childhood experiences and the trajectory of the alliance over time.

Hypotheses

The purpose of this study is to explore the effects of adverse childhood events on initial levels of the therapeutic alliance, as well as its trajectory, over the first six sessions of therapy.

Employing a dyadic growth curve model, the current study will test three hypotheses to explore conflictual findings in alliance research and a newly emerging relationship between ACEs and the therapeutic alliance:

1. The therapeutic alliance will follow a linear upward trend in first six sessions of therapy.

2. Adverse childhood experiences will be associated with lower levels of the therapeutic alliance during the onset of therapy for both males and females.

3. Adverse childhood experiences will have a negative influence on the slope of the therapeutic alliance for both partners.

Methods

The purpose of this manuscript is to examine the effects of adverse childhood events on the initial levels and the trajectory of the therapeutic alliance during the first six sessions of therapy. This analysis was conducted using couple data from a clinical program the Northeastern Region of the United States of America.

Participants

Each participant in the study completed demographic assessments to assess the occurrence of ACEs during intake, and ongoing assessments were collected to measure the therapeutic alliance every session following the onset of therapy. Cases were selected from couple and family therapy modalities within the dataset if they met inclusion criteria. Inclusion criteria comprised having both partners in a committed relationship and both partners attending therapy together with a shared therapist. The final sample included 157 couples. On average, couple cases completed 12.51 (SD = 13.28) sessions of therapy and family cases completed 12.03 (SD = 12.05) sessions of therapy. Most of the subjects in the final sample were Caucasian (78.6%), and 2.0% were African American, 5.0% were Asian, 9.7% were Hispanic, and 4.7%

identified as another race. The participants reported relatively high education, with 20.1%

reporting a high school graduation, 35.1% reporting either some college (12.3%) or college

graduation (22.8%), and 26.7% reporting post-graduate education. The average household

income for the sample fell between $40,000 and $49,999 per year, but the highest proportion of

the sample reported a yearly income above $70,000 (27.8%) per year and 9.6% reported less than

$10,000.

The training clinic that treated these cases is located in the Northeastern United States

and serves the local community by treating relational and individual psychological problems.

Severe psychiatric symptoms like addictions and psychoses are screened from the clinic's active

caseload and referred to other local services. Therapy was provided by 68 marriage and family

therapists, including master's students (86.8%), doctorate students (5.9%), and faculty members

(7.4%). All master's students in the program received weekly supervision from licensed marriage

and family therapists with both live and video observation. Most therapists were female (83.8%)

and Caucasian (82.1%). The average age of therapists was 25.7 years old.

Measures

Therapeutic Alliance

The therapeutic alliance was measured using the Session Rating Scale (SRS; Duncan et

al., 2003). The SRS is a four-item visual analog scale based on three elements of the therapeutic

alliance for individuals: the relational bond between the therapist and the client, client and

therapist agreement on the goals of therapy, and agreement on the tasks of therapy (Duncan et

al., 2003). In its development, the SRS had a Cronbach's alpha of .88. The reliability of the SRS

in the current sample was also estimated in SPSS version 25. Cronbach's alpha for the SRS in

the current sample was .94. As a brief yet reliable 4-item measure, this measure was selected to

reduce client burden while still providing important, session-by-session information for the clinician regarding individual clients' sense of a working relationship with the therapist. The SRS was completed by clients at the end of every session and is used as the dependent variable in this analysis. After data was collected for the participants, a sum score of all four items was computed to in SPSS version 25 (IBM Corp., 2017) and then predicted by each partner's total number of adverse childhood experiences.

Adverse Childhood Experiences

Adverse childhood events were measured during the demographic portion of the client's initial assessment. Clients were asked to respond whether they experienced any of the following in their childhood household: alcohol, drug, or prescription abuse, physical abuse or violence, sexual abuse, emotional abuse, mental illness, trouble with the law, and suicide or attempted suicide. These seven categories coincide with Felliti's (1991) initial description of adverse childhood events. After marking either "yes" or "no", the answers were coded as either 1 or 0. Consistent with ACEs literature, the total number of adverse childhood experiences was summed for each participant and used for analysis.

Procedures

All clients in the university clinic complete scheduled assessments as part of their therapy experience. Before the first session, clients completed initial demographic and well-being measures as a baseline from which to determine therapeutic progress. As part of the initial assessments, clients were also asked about the presence of adverse childhood events in their families of origin. Starting immediately after the first session, clients were given all measures of the therapeutic alliance; after every subsequent session, clients completed the SRS. On the clients' fourth session and every fourth session following, participants were administered all

measures except for the SRS, which was also given directly after the session. Therapy was provided as usual with no attempt to prescribe overall treatment or specific interventions. All sessions were either conducted or supervised by licensed marriage and family therapists. Data for the study is stored in a secure research drive and managed through SPSS (IBM Corp., 2017).

The relationship between adverse childhood experiences and the therapeutic alliance was tested using a multivariate growth curve within a structural equation modeling framework. Growth-curve modeling is useful when data has been collected over multiple time points, where growth is modeled as a factor of multiple observations of the same variable (Duncan et al., 2006). The current study will draw from alliance and outcome data collected from 153 couples during the first six sessions of therapy. The impact of each partners' total ACE score on the initial level (intercept) and trajectory (slope) of the alliance was estimated in Mplus, version 8 (Muthen & Muthen, 2019). Preliminary growth-curve models were estimated for male and female alliance scores to assess the suitability of a dual-growth curve model. Then, dual-growth curve models were estimated (if appropriate) for both outcomes to determine the impact of ACEs on the intercept and slope of participants' alliance. See figures 1 and 2 for preliminary growth curve models estimating the slope and intercept of male and female alliance.

Analysis and Results

Initial analyses were conducted to determine the distributional characteristics of demographic and study variables, including bivariate correlations. Analyses were conducted in Stata version 16 (StataCorp., 2019). See Table 1 for a summary of the sample sizes, means, standard deviations, and intercorrelations of demographic variables.

Preliminary Analysis

Sample sizes for male and female means for alliance measures at each time point were estimated to determine attrition rate and suitability for growth-curve analyses. Growth-curve structural equation modeling is appropriate when linear growth for is visible over time for the same measures of multiple time points.

Figure 1

Conceptualization of the growth-curve model estimating the slope and intercept of female therapeutic alliance
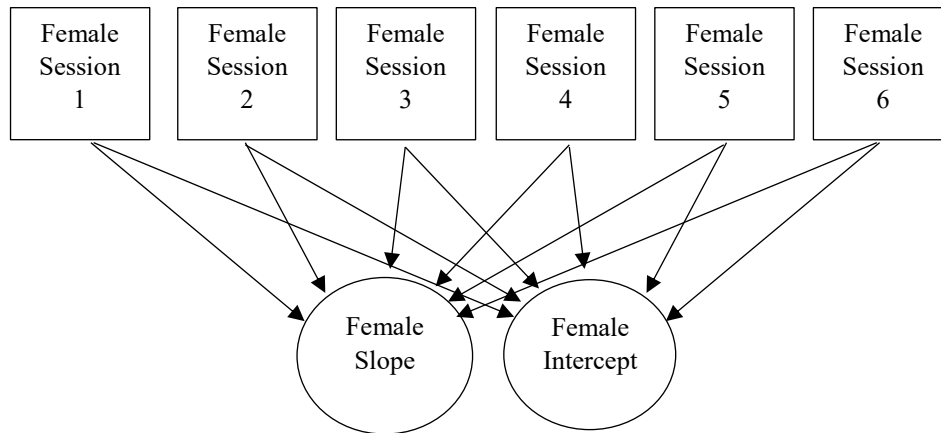
Figure 2

Conceptualization of the growth-curve model estimating the slope and intercept of male therapeutic alliance
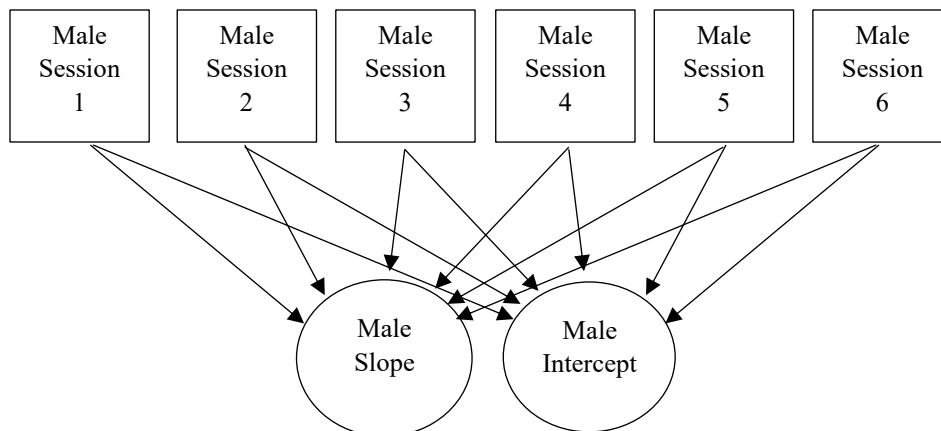
Figure 3

Conceptualization of the dual growth-curve model estimating the effects of ACEs on the intercept and slope of male and female alliance scores
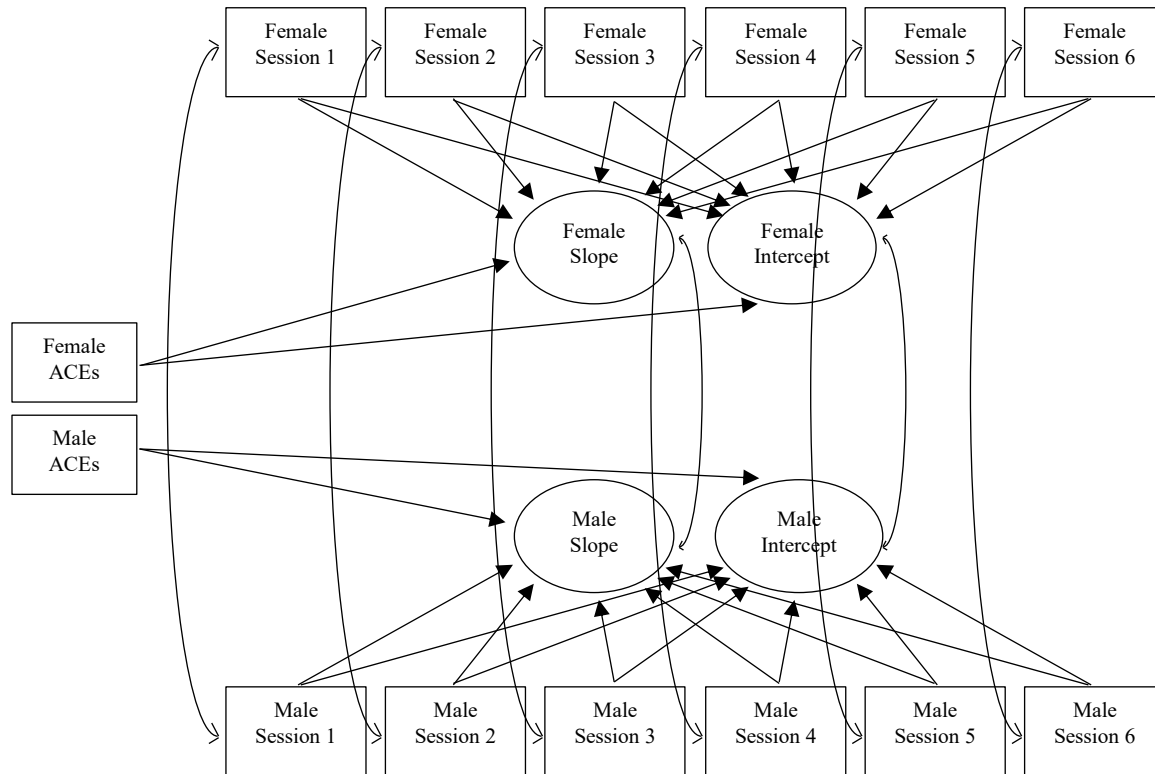
Analyses were conducted in SPSS version 25 (IBM Corp., 2017) and Mplus version 8 (Muthen & Muthen, 2019) See Table 2 for a summary of the means, standard deviations, ranges, and sample size for SRS scores at each time point. The missing at random assumption for full information maximum likelihood estimation was tested using Schlomer and colleagues' (2010) recommendation to create dummy variable for missing cases, then correlate the dummy variables with variables of interest. Male and female partners' missing data was correlated with measures of interest, including SRS scores at each time point. Both males and females' missing data correlated with most variables of interest. Correlations ranged from .19 to .32 with significant correlations above .28 for men. Female correlations ranged from .09 to .27, with significant

Pearson correlations above .20. This provides some evidence that the missing data in this sample was missing at random.

Before estimating a dual-growth curve model to estimate main effects in the full model, two linear growth curve models were estimated to determine the suitability of linear growth curve modeling for male and female data in this sample. As part of the preliminary analysis, two growth-curve models were estimated for female and male partners' alliance scores over the first six sessions of therapy. Based on model fit standards published by Hu and Bentler (1999), the male therapeutic alliance growth curve produced good model fit (RMSEA = 0.05; CFI = 0.96; SRMR = 0.05) and significant slope and intercept estimates ($\beta = 0.33$; $p = 0.001$). The female therapeutic alliance growth curve produced fair model fit indices (RMSEA = 0.06; CFI = 0.93; SRMR = 0.12), but did not estimate a significant slope estimate ($\beta = 0.15$; $p = 0.15$).

Hypothesis One

To address the first primary research question that alliance scores will follow a linear, upward trend, a dual-growth curve model was estimated to correlate partners' slope, intercepts, and responses at each time point, controlling for correlations between partners' responses at each time point and individual slopes and intercepts. However, the dual-growth curve model for couples' SRS scores resulted in a non-positive covariance matrix during the model estimation. In this case, the non-positive covariance matrix was the result of a negative variance estimate for the latent variables; this prevented a reliable estimation of an actor-partner alliance model. While this limited the ability to control for partner effects for couples' SRS scores, I addressed the first research question for males' and females' alliance scores by drawing upon the two separate models estimated in the preliminary analysis. See Table 3 for the unstandardized coefficients estimating male and female initial levels and rate of change in the therapeutic alliance.

Table 1

Summary of interrelations, means, and standard deviations for study variables

Measure	*n*	*M*	*SD*	1	2	3	*4*	5	6	7	8	9	10
1. Female age	163	33.2	11.6	-									
2. Male age	148	35.2	12.2	.90**	-								
3. Female education	161	6.0	2.3	-.05	-.02	-							
4. Male education	148	5.6	2.5	.02	.06	.52**	-						
5. Female report of years together	136	9.2	9.4	.80**	.75**	-.05	.11	-					
6. Male report of years together	128	9.2	9.6	.82**	.74**	-.08	.06	.99**	-				
7. Female income	135	5.4	5.4	.10	.09	.07	.16	.17	.18	-			
8. Male income	131	5.5	5.5	.16	.15	.18	.17	.19	.17	.71**	-		
9. Female adverse childhood events	197	1.3	1.9	.03	.10	-.25**	-.28**	-.03	.01	-.31**	-.14	-	
10. Male adverse childhood events	181	1.2	1.6	.11	.10	-.02	-.25**	-.02	-.05	-.07	-.07	.24**	-

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

Table 2

Summary of Means, Standard Deviations, and Ranges for Female and Male Partners' SRS Scores at Measure Time Points

	Female Partner				Male Partner			
	n	*M*	*SD*	Min–Max	n	*M*	*SD*	Min–Max
SRS – Session 1	136	33.4	6.21	3.8-40.0	119	33.2	6.34	7.7-40.0
SRS – Session 2	131	34.3	5.53	12.8-40.0	116	33.3	5.87	13.6-40.0
SRS – Session 3	114	34.7	5.23	4.9-40.0	109	32.9	6.27	12.8-40.0
SRS – Session 4	108	32.4	5.69	6.6-40.0	93	33.9	5.82	9.9-40.0
SRS – Session 5	102	35.0	5.57	5.3-40.0	89	34.4	5.86	18.7-40.0
SRS – Session 6	95	34.2	6.69	4.7-40.0	83	36.9	5.89	2.0-40.0

Results from the alliance models provide partial support for the first hypothesis. For male and female alliance scores, only the male model estimated a significant, positive trend over the first six sessions of therapy ($\beta = .33$; $p = .001$). The female model did not produce the same positive trend ($\beta = 0.15$; $p = .13$). These models produced insignificant variance estimates for both males' and females' slopes, suggesting there was little variation between participants' estimated alliance trajectories. Variance estimates for both partners' initial alliance scores were significant, indicating that there were significant differences between participants' initial reported alliance levels. Given the total SRS score in this sample ranged from 0 to 40, the finding that male partners experienced a significantly positive change in the alliance over the first six session is both statistically and practically significant for therapists who are monitoring the session-by-session alliance with their clients. However, male alliance slope estimates had insignificant variance around the mean, suggesting that there is a small spread of slopes for male clients in this sample (Var $= 0.15$, $p = .58$).

Table 3

Unstandardized Coefficients and Variances for the SRS Growth Curve Models

Parameter	Coefficient	Variance
Initial level		
Male Partner	32.78***	20.43***
Female Partner	33.84***	20.41***
Rate of Change		
Male Partner	.333**	.151
Female Partner	.142	.01

**$p < .01$. ***$p < .001$.

Hypothesis Two

To answer the second research question that ACEs will be associated with lower initial levels of overall alliance scores for each partner, two multivariate growth curve models were estimated. Due to a non-positive definite covariance matrix in the dual-growth curve model of couples' therapeutic alliance, a dual-growth curve model for the alliance data was inappropriate. While there are several reasons for this error, the current sample resulted in a negative variance for the female slope. When the negative variance was constrained to a set value, the same error was generated for a negative variance in the latent male intercept parameter. To address this issue, two separate models were fit for male and female alliance data. Model fit for the male growth curve model was good (RMSEA = 0.04, CFI = 0.96, SRMR = .05), and model fit for the female was fair (RMSEA = 0.05, CFI = 0.92, SRMR = 0.11). Neither the male nor female SRS model provided support for the second hypothesis. Male and female initial alliance levels were negatively correlated with each ACE, but not at statistically significant levels ($\beta = -0.34$, $p = .0.26$; $\beta = -0.08$, $p = 0.75$, respectively). For a summary of the main effects of ACEs on the intercept and slope of the male and female SRS scores, see Table 4.

Hypothesis Three

The preceding growth-curve models also addressed the third research question that ACEs will be negatively connected to the development of the alliance and clients' rate of progress. However, the male and female SRS models did not provide evidence for this hypothesis; neither male nor female alliance development were negatively connected to adverse childhood experiences ($\beta = 0.02$, $p = .0.66$; $\beta = 0.06$, $p = 0.17$, respectively). The slope of male and female alliance scores were positively impacted by each ACE, albeit insignificantly. For a summary of the main effects of ACEs on the slope of the alliance, see Table 4.

Table 4

Unstandardized Coefficients for Actor Effects of ACEs on Initial Level and Rate of Change in the Therapeutic Alliance

	Actor Effects	
ACEs on	Husband	Wife
Parameter	Coefficient	Coefficient
Alliance		
Intercept	-0.341	-0.078
Slope	0.024	0.063

Discussion

Using attachment theory as a framework for relationship formation, the purpose of this study was to explore potential relationships between adverse childhood experiences (ACEs) and therapy patients' initial levels and trajectory of the therapeutic alliance. Likewise, the present analysis also addressed the question of how the therapeutic alliance develops for male and female partners during the first six sessions of therapy. These growth curve models estimated a slightly lower starting point for the alliance, followed by a positive linear trend for SRS scores over the first six sessions of therapy for men. The female growth curves produced a slightly

higher initial alliance rating, but female alliance scores only increased slightly over the first six sessions of therapy. While both male and female partners experienced a general positive trend in alliance scores over time, female partners' alliance scores increased at a slower rate than male partners' alliance scores. One potential explanation for this finding is that women may be more comfortable with the process of therapy from its onset, and thus started therapy with a more positive perception of the therapeutic alliance, where men may grow accustomed to the therapeutic process over time (Browne et al., 2019).

While the current analysis only provided partial support the first research hypothesis, it also invites discussion about factors that ameliorate the detrimental effects of childhood trauma. Dissimilar to previous findings on the effects of ACEs on the therapeutic alliance (Anderson et al., 2019), the present results found no significant relationships between ACEs and participants' between-system alliance scores over the first six sessions of therapy. While ACEs were related to lower initial alliance ratings for both men and women, neither estimated effect was significant. Likewise, adverse childhood experiences did not predict a lower trajectory of male and female alliance formation over the first six sessions of therapy. These findings are contrary to other studies that support the negative relationship between adverse childhood experiences and relationship formation and attachment style (Banford Witting & Busby, 2018; Murphy et al., 2014; Anderson et al., 2019).

The findings from the current study differ in that no significant relationship was found between childhood adversity and the formation of the therapeutic relationship. One potential explanation for this difference is that the within-system alliance (the working relationship between partners' sense of safety and agreement around therapeutic tasks and goals) may be more likely influenced by childhood adversity. While the current study employed a reliable

measure of the alliance, the SRS only assesses dimensions of the between-system alliance. This may have contributed to the discrepancies between this and other studies, as individuals who experience childhood trauma may have more difficulty developing a working alliance with their partner than with their therapist. Because relational stakes are high within a romantic relationship, maladaptive attachment structures may be more likely to emerge in the within-system alliance, especially when childhood trauma is present. On the other hand, therapists take an active role in developing an environment in which clients can explore attachment needs without the threat of relational dissolution. The inherent difference between the within-system alliance and the between-system alliance in terms of long-term commitment, attachment, and emotional investment may explain why the current study did not find a connection between ACEs and the SRS conceptualization of the therapeutic alliance.

Despite the contradictory results between these findings and recent studies, the current study also invites a dialogue about properties of between-system alliance that may interact differently with client's internal working models of attachment. While the therapeutic alliance has been conceptualized as an attachment relationship (Smith et al., 2010; Yusof & Carpenter, 2016), these finding suggests that clients' internal working models of attachment may operate differently in the between-system alliance than in the within-system alliance. Given previous findings that ACEs are connected to attachment insecurity (Murphy et al., 2014), one could expect that clients' adversity during childhood and subsequent attachment working models would impact the development of a working relationship with a therapist. Previous research has supported this idea, as found in a meta-analysis conducted by Diener et al. (2009). Diener and colleagues found that client secure attachment was significantly correlated with a stronger therapeutic alliance, where client insecure attachment was significantly correlated with a weaker

therapeutic alliance. However, neither the current work nor previous studies have explored how insecure attachment may influence the within and between-system conceptualizations of the alliance differently.

While therapeutic interventions like expressing empathy, normalizing vulnerability, and invitations for truthful self-disclosures (Friedlander et al., 2005) resemble secure attachment behaviors like responsiveness and engagement (Sandberg et al., 2012), therapists' interventions may serve to strengthen the bond between the therapist and the client, including increasing agreement on the therapeutic tasks and goals. Caring behaviors from the therapist can increase the sense of safety and security for a client, help the client feel connected to the therapist, and strengthen the between-system alliance (Friedlander et al., 2005). Rather than viewing ACEs as equally detrimental to both the within and between-system conceptualizations of the alliance, the current work explores how relationship formation may vary in settings where attachment threat is low. The between-system alliance is one such setting, where professional training, therapist differentiation, and relational safety may help ameliorate attachment threats.

The methodology of the current study, which relied on a between-system conceptualization of the alliance, may have contributed to contradictory findings from other studies. For example, differences may have stemmed from the use of a non-systemic alliance measure that did not assess couples' sense of agreement and safety in the within-system alliance. Anderson and colleagues found that ACEs had a negative estimated effect on male alliance scores at session 4, using the Couple Therapy Alliance Scale (CTASr-sf; Pinsof et al., 2008). The 12-item CTAS included questions about the within-system alliance, or the working therapeutic relationship between partners, whereas the SRS only measures the between-system alliance. Anderson and colleagues may have found a significant relationship between ACEs and male

partners' alliance because the CTAS included data that drew from couples' experience together in therapy. The current study used the 4-item Session Rating Scale (SRS; Duncan et al., 2003), which only drew data from each individual's experience with the therapist and the therapy process. While both measures have demonstrated statistical reliability, the qualitative differences between the two measures regarding the within and between-system alliance constructs may contribute to different results.

The current study is also among the first in the author's knowledge that examines the longitudinal growth of the alliance as a function of growth-curve modeling. Despite the limitations of the current study, it is important to note that the present finding that ACEs did not significantly strengthen or detract from the trajectory of the between-system alliance is unique from previous studies. While the current results do not support evidence for a connection between ACEs and the strength or trajectory of the between-system alliance, these findings invite further discussion on key differences between individuals' working relationship with their therapist and individuals' working relationship with their partner.

Limitations

There are limitations which restrict the potential impact of these results. First, female alliance data did not adequately fit a linear model in this sample. This poses several difficulties when interpreting the results for female partners' alliance parameter estimates because linear growth-curve modeling is appropriate for data which follows a general, linear trend over time. Because linear growth-curve modeling requires the assumption that the data will fit linear change over time, this type of model was not an ideal fit for the female alliance data, which started high and continued with only a slight positive trend. Second, the current analysis does not examine any mediating factors; rather, ACEs were the sole predictor of each partner's estimated slopes

and intercepts. While more complex models that included control variables like race, education, and income were estimated, the model fit indices for the ACE-only model indicated the best model fit. Future research should examine moderating and mediation relationships of protective factors that may reduce the impact of childhood trauma on the therapeutic relationship.

As mentioned, the disparity between the findings of the current study and Anderson and colleagues' (2019) findings may also be explained by the limitations in the current study's measure of the between-system alliance and adverse childhood experiences. Other alliance scales may provide a more robust view of both the within-system and between-system alliance, where the SRS only measures elements of each individual's between-system alliance with their therapist. For example, the SRS asks a single question about Bordin's (1979) three domains of the alliance: a relational bond between the client and therapist, agreement on the tasks of therapy, and agreement on the goals of therapy. On the other hand, the CTAS assesses a more recent conceptualization of the alliance, including both the working alliance between the therapist and each partner and the working alliance between partners. Another limitation of this study stems from the demographic measure used to assess the presence of adverse childhood experiences. Rather than asking if an ACE occurred specifically to the individual, the demographic assessment for this sample assessed the presence of ACEs within the client's household. This potentially confounded the effects of ACEs that happened directly to individuals with ACEs that were not experienced directly, but rather indirectly.

Future Research

This study introduces a new body of research that examines the relationship between adverse childhood experiences and the between-system alliance. Specifically, the current results call for more research to better understand how the therapeutic alliance develops during therapy

and factors that either help or hinder its development, including factors that impact both the within and between-system alliance. Future research should also replicate and expand upon these analyses to develop a robust body of literature to predict how ACEs may be connected to clients' relationship formation in a therapeutic setting. Contradictory findings between this and previous studies should be further explored to identify if ACEs are correlated with disrupted relationship formation in either the within or between-system therapeutic alliance.

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