Financial Therapy Association

Journal of Financial Therapy

Volume 13 | Issue 1 Article 4

2022

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Recommended Citation

Ross, D., Coambs, E., & Johnson, E. (2022). Trauma of the Past: The Impact of Adverse Childhood Experiences on Adult Attachment, Money Beliefs and Behaviors, and Financial Transparency. *Journal of Financial Therapy, 13* (1) 4. https://doi.org/10.4148/1944-9771.1280

Trauma of the Past: The Impact of Adverse Childhood Experiences on Adult Attachment, Money Beliefs and Behaviors, and Financial Transparency

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Adverse childhood experiences (ACEs) can have a strong, lasting impact on our mental and relational outcomes as adults. They may also impact how we address financial beliefs and behaviors. The current study utilizes 500 participants from Amazon MTurk and structural equation modeling (SEM) to explore the relationships between ACEs and relational financial transparency behaviors through attachment style and money beliefs and behaviors. Findings indicated significant direct and indirect associations across these pathways, particularly for experiences of reported neglect, verbal, and sexual abuse on less security in adult attachment styles. In turn, insecure attachment styles were linked to increased maladaptive financial beliefs and behaviors which were significantly associated with less financial transparency in the relationship. The findings provide support for the impact of childhood trauma on inter-and intra-financial behaviors. Practice implications are discussed for financial practitioners in utilizing a narrative financial therapy modality while still adhering to ethical considerations.

Keywords: attachment; family finance; adverse childhood experiences; money beliefs; money behaviors; trauma

Money remains a complicated topic in culture and relationships, often creating such discomfort that finances are less likely to be discussed in a relationship (Atwood, 2012; Afifi et al., 2018). Barriers to developing positive financial management processes may develop in our past experiences. Adverse childhood experiences (ACEs) can be described as potentially traumatic events that can have negative lasting effects on health and well-being, such as maltreatment, abusive practices, or dangerous environments (Boullier & Blair, 2018; Duh, 2016). ACEs can have a strong, lasting impact on our mental, physical, and relational

ISSN: 1945-7774

outcomes as adults (Papp & Cummings, 2009). Additionally, adverse childhood experiences may also impact how we address financial decisions and behaviors. There is a dearth of research exploring the mechanisms and processes of how adverse childhood experiences may affect financial behaviors and mindsets in adulthood. When money becomes a place of chronic conflict and relational discord, it decreases individual and couple's overall well-being (Gudmunson & Danes, 2011; Papp & Cummings, 2009). Deepening the basis of understanding financial conflict serves to help inform new financial counseling, financial education, and financial management policy decisions about how to work with couples and money. Understanding one's attachment style and childhood experiences gives insight into how previous experiences affect financial behaviors.

The caregiver-child relationship is the first point of socialization and relationship connection for a child. The relationship bond between caregiver and child was investigated in a seminal study by Bowlby and Ainsworth, known as the "Strange Situation" study (Ainsworth, 1978; Bowlby, 1984). When the "Strange Situation" study was conducted, child reactions were observed when entering a new environment, in this case, when the parent left the child alone in the new environment, and upon reunion in the environment. Based on observations, these bonds were categorized as specific attachment styles (i.e., secure attachment, avoidant/dependent attachment, and anxious attachment). The experiences of caregiver availability and responsivity affect the attachment type developed. In a secure parent-child attachment, also called closeness in the current manuscript, the child can connect with the parent and form close relationships without concerns of rejection. The parent is available and responsive to the child's needs. In avoidant parent-child attachment, also referred to as dependence in the current manuscript, the child displays independence and disconnect from the parent. The parent is available but not responsive to a child's needs. In an anxious parent-child attachment, also called anxiety in the current manuscript, the child wants connection but is uncomfortable with the intimacy at the same time. The parent may fluctuate in provided availability and reliability, creating a pattern of uncertainty in the parent-child relationship. Evidence suggests these attachment styles may be impacted by negative experiences during early developmental years (Boullier & Blair, 2018; Duh, 2016).

Experiences of extreme hardship or trauma for children are known as adverse childhood experiences. ACEs commonly include instances of neglect or abuse, as well as developmentally harmful living conditions (Boullier & Blair, 2018). Previous research literature shows that ACEs can negatively impact the physical and mental health of children, carrying on into adulthood (Boullier & Blair, 2018; Duh, 2016). The occurrence of ACEs has been shown to have strong correlations with developing insecure attachment styles in the caregiver-child relationship (Grady et al., 2017; Raby et al., 2017). The increased frequency and number of ACEs experienced by an individual have been shown to increase the individual's difficulty in disclosing and resolving the trauma experienced (Thomson & Jaque, 2016). This unresolved trauma may result in an increased inability to form interpersonal connections (Thomson & Jaque, 2016) across relationship processes, such as relational financial management (Gudmunson et at., 2007; LeBaron et al., 2018). The current manuscript aims to explore the association of ACEs with relational and financial beliefs and behaviors, namely through the expression of attachment style.

ISSN: 1945-7774

LITERATURE REVIEW

Duh (2016) suggested approximately one in four children in the U.S. are raised in single-parent households where stress, economic hardships, and emotional hardships are experienced. Furthermore, the prevalence of childhood abuse and neglect is estimated to be 674,000 confirmed cases of child abuse or neglect, and 3,501,000 investigations by child protective services in 2017 (U.S. Department of Health and Human Services, 2017). Among the most severe instances of hardship for these children are what is known as adverse childhood experiences (ACEs) (Boullier & Blair, 2018; Duh, 2016). With the knowledge that adverse childhood experiences impact one's attachment style, this concept is further explored in regard to the relationship between attachment and financial behaviors. The following sections discuss the current research as it relates to these adverse childhood experiences, attachment and relationship dynamics, attachment and financial outcomes, and financial behaviors.

Adverse Childhood Experiences

Adverse childhood experiences can be described as potentially traumatic events that can have negative lasting effects on health and well-being (Boullier & Blair, 2018; Duh, 2016). This broad definition may include a number of maltreatment and/or abusive practices, as well as living environments that may be harmful to the child's development (Boullier & Blair, 2018). Research has indicated the effects of ACEs encompass several varying outcomes including a significantly reduced likelihood of high school graduation, an increased risk for depression, health-compromising behaviors, juvenile arrest, and felony charges (Giovanelli et al., 2016). In adulthood, individuals who experienced ACEs are less likely to continue their education after high school or hold skilled jobs, putting them at a greater risk for low socioeconomic status and diminished resilience resources (Giovanelli et al., 2016; Nurius et al., 2015). Negative outcomes tend to be more severe or long-lasting if the ACE experienced is recurrent, chronic, and contains multiple issues including poverty, or deleterious parent-child relationships associated with sexual abuse. ACEs are often categorized as follows: physical abuse, emotional abuse, sexual abuse, peer violence, and community violence (Giovanelli et al., 2016). It is, however, important to note that not all children exposed to ACEs respond similarly, following the experiences in childhood, varying results are produced in later adult years, such as anxious adult attachment styles, lack of transparency, and trust in relationships. (Agarwal, 2015). These negative outcomes may be related to one's individual attachment style and from experiencing many adverse childhood experiences.

Attachment and Relational Outcomes

One of the most heavily researched areas related to adverse childhood experiences is the effect on attachment and the factors directly impacted by attachment (e.g., future relationships, independence, emotion regulation, etc.). The findings of this body of research consistently show that specific examples of ACEs, such as childhood abuse and neglect, have a strong association with an insecure attachment (e.g., avoidant or anxious) to caregivers (Grady et al., 2017; Raby et al., 2017). Psychological trauma, specifically resulting from

ISSN: 1945-7774

maltreatment or other adverse experiences in childhood, distorts one's sense of self, creating a fundamental shift in psychophysiology (Shapiro, 2018). It is not uncommon for children's socioemotional development to be disrupted (e.g., empathy and self-regulation) and their understandings of themselves to be distorted (i.e., insecure attachment formation), which then puts them at risk for later relational difficulties (Grady et al., 2017). Thomson and Jaque (2016) investigated the relationship between the number of ACEs and the severity of insecure attachment formation to find that as the number of ACEs increased amongst individuals, there was a greater association with a lack of signs to indicate resolution for past trauma or loss experiences, as well as a greater difficulty disclosing past trauma. This outcome suggested a greater sense of unresolved mourning and, therefore, a heightened inability to connect interpersonally (Thomson & Jaque, 2016).

Attachment, Financial Outcomes, and Financial Behaviors

Research related to and apart from adverse childhood experiences indicates significant links between attachment formation in childhood and adult financial outcomes (Gentina et al., 2018). The notion of a secure attachment suggests that children feel a level of comfort and protection given by their caregivers, knowing they can depend on these adults to help satisfy their physical and emotional needs. This translates to financial standings later in life through the relationship of support, relating to attachment style, and desired financial stability. Duh (2016) explains the connection between future spending habits and the amount of emotional and financial support a child received growing up; essentially finding that if the caregiver is more loving, emotionally, and financially supportive, individuals tend to be more cautious spenders later in life (Duh, 2016). This suggests that the more secure one's relationship or attachment to their parents, the greater the likelihood they will develop healthy spending habits in adulthood. Gentina et al. (2018) suggest that stronger parental attachment aids in the creation of healthy spending habits; however, it also serves to reduce negative money attitudes, excessive materialism, and unethical financial beliefs and decision making. Additional research implied a possible explanation for this being the contribution from positive support as related to self-esteem and feelings of power. Each is associated with decreased materialism as a means of compensating for low self-worth, which, low self-worth is often seen in individuals with an insecure attachment style. This reduced materialism may, in turn, be associated with more ethical consumer beliefs (Gentina et al., 2018).

In addition to the contribution of differences in attachment styles, a possible explanation for the relationship between adverse childhood experiences and financial behaviors may be the connection between trauma and decision-making processes. Trauma may be associated with the development and breaking of neuropathways within the brain, which may then affect one's decision-making process (Perry, 2009). These neuropathways may be rerouted to reflect an emotional or psychological void left by the traumatic experience(s), often attempted to be satisfied through spending money, hoarding money, or controlling through access to or limitation of money (Ross & Coambs, 2018). The distortion in the sense of self commonly found amongst trauma survivors greatly affects one's psychophysiology. The present distortion of self-image and impulse regulation occurs through changes in the limbic region of the brain (Shapiro, 2018). The resulting alteration in brain makeup significantly impacts decision-making, such as when it is and is not

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appropriate to spend money, further implying that these poor spending habits not only be a habit but physiologically embedded into one's brain chemistry (Shapiro, 2018).

As previously noted, greater instances of ACEs are associated with poorer adult conditions, including low socioeconomic status, diminished resilience resources, high adult adversity, and poorer psychological well-being (Nurius et al., 2015). Although acute events may not necessarily lead to definite poor outcomes in adulthood, it does sensitize the individual to future adverse events (Agarwal, 2015). These life conditions illustrate chains of risk in which one set of adversities tends to leave one vulnerable to another. For example, multiple ACEs may lead to cumulative consequences, such as less educational achievement, which leads to financial insecurity that then increases the risk for adult adversities such as homelessness, unemployment, and marital conflict (Nurius et al., 2015). Consequently, this overwhelming spiral of adversities over the life course weakens opportunities for stable social support, the ability to obtain professional help, and maintain healthy habits; all of which collectively and progressively degrade psychological well-being (Nurius et al., 2015).

Financial Transparency

In marital and cohabiting relationships, finances, in general, play an important role in couple satisfaction. Indeed, couples reporting financial issues report lower relationship satisfaction overall (Koochel et. al., 2020). Although couples can display positive communication skills while discussing finances, that does not imply that each partner is being completely truthful. Specifically, financial transparency encompasses a couple's amount of secrecy, trust, disclosure, and overall financial partnership (Koochel et al., 2020). Individuals with poorer spending habits are less likely to disclose their financial decisions, often keeping them a secret, which can, in turn, be extremely harmful to trust and partnership when dealing with finances (Koochel et al., 2020).

Current Study

The purpose of the current study is to explore the relationship between constructs of self-reported measures of childhood adversity experiences, attachment, beliefs and behaviors associated with money, and financial transparency in relationships. The current study is guided by John Bowlby's attachment theory which links together several key components and provides new considerations for financial and relational processes. Attachment theory is a developmental theory that explains how early parental nurturance develops an internal template of self and external representation of others' emotional availability and ability to provide safety and security (Bowlby, 1984). Additionally, attachment theory has three typologies including secure attachment, avoidant/dependent attachment, and anxious attachment.

Although extensive research has been conducted on ACEs and their effects, revealing a number of deleterious associated outcomes, the current manuscript will focus more specifically on the impact of adverse childhood experiences on financial outcomes, such as beliefs, behaviors, and relational dynamics. It is predicted that adverse experiences during childhood with guardians, with peers, or within the larger community will affect the

ISSN: 1945-7774

attachment and emotional regulation styles, which in turn, will negatively impact outcomes later in life associated with relationship dynamics, financial beliefs, and financial behaviors. This study will extend the existing literature on financial and relational behavior outcomes by investigating how adverse experiences during early developmental periods shape one's inter-and intra-thinking and behaviors around money.

Hypotheses:

1. The frequency of ACEs is positively correlated with anxious adult attachment style, and negatively correlated with dependence and closeness.
2. Anxious attachment style will be positively correlated with maladaptive financial beliefs and behaviors, while closeness and dependence are negatively correlated with maladaptive financial beliefs and behaviors
3. Maladaptive money beliefs and behaviors will be associated with a decrease in financial transparency, in terms of partner togetherness, secrecy, and trust.

METHODOLOGY

Procedure

Data were collected from a convenience and volunteer sample recruited through an online, crowdsourcing website, Amazon Mechanical Turk (MTurk). MTurk allows members to sign-up, complete Human Intelligence Tasks (HITs), and then receive a nominal remuneration for their participation. Participants were required to pass certain inclusion criteria to participate in the study's survey. Inclusion criteria were set such that participants must be English speaking, U.S. citizens, be over the age of 18, have completed a minimum of 100 HITs previously within the MTurk system, and have a corresponding 95% approval rating on MTurk from their past HITs. The participants in this study varied in race, gender, age, occupation, and income level. Each participant was compensated $2.25 for completing the survey, which was above the average payment for MTurk questionnaires. The survey is distributed via email providing the Qualtrics link, giving the participants the freedom to complete this survey at their leisure. Participants were given an informed consent agreement which they agreed to before completing the survey. The survey used for the current study consisted of questionnaires pertaining to demographics, adverse childhood experiences, adult attachment styles, money beliefs and behaviors, and financial transparency. Based on recommendations from Oppenheimer et al. (2009), three attention check questions with unequivocal answers were also given to ensure quality control.

ISSN: 1945-7774

Table 1.

Demographic Characteristics of Participants (N = 500)

Characteristic	*n*	%
Gender		
Woman	200	41.2
Man	284	56.8
Other	1	0.2
Race and Ethnicity		
Caucasian/White	358	71.6
African American/Black	81	16.2
Hispanic	21	4.2
American Indian or Alaskan Native	3	0.6
Native American	1	0.2
Asian	27	5.4
Other	6	1.2
Age (years)		
18-30	98	29.4
31-50	166	58
51-75	42	12.6
Marital Status		
Single	144	28.8
Dating/Courting	75	15.0
Engaged	24	4.8
Married	224	44.8
Divorced/Separated	23	4.6
Other	6	1.2
Education		
Less than high school degree	1	0.2
High school degree/equivalent	54	10.8
Some college, no degree	93	18.6
Associate degree	57	11.4
Bachelor's degree	230	46.0
Professional degree	29	5.8
Graduate degree	33	6.6
Income		
$0	3	0.6
$1.00 - $25,000	107	21.5
$25,001 - $50,000	173	34.5
$51,001 - $100,000	158	31.6
$100,000+	59	11.8
Debt		
$0	137	27.5
$1.00 - $10,000	160	31.9
$10,001 - $50,000	113	22.7
$50,001 - $100,000	33	6.5
$100,001+	57	11.4

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Participants

An a priori statistical power analysis using G*Power (Faul et al., 2007) – based on an alpha (α) of .05, a beta (β) of .05, a medium effect size (f2) of .15 (Cohen, 1988), and 48 paths- yielded a recommended sample size of 317. The current study had a sample size of 500 respondents, which provided sufficient power to detect an effect size (f2) of .15 and larger. The current study utilized data from a sample of adults aged 18 who are US citizens. Of the 500 participants, 71.6% were White, 16.2% were African American, 4.2% were Hispanic, 0.6% American Indian/Alaskan Native, 0.2% Native American, 5.4% Asian, and 1.2% other. Out of the participants, 41.2% identified as female, while the remaining 56.8% identified as male, and 0.2% identified as other. Of the 500 participants, 58.4% had a bachelor's degree or higher. 44.8% of the sample was married. The skewness for all variables, except for race and age was between -1 and 1.

Measures

The participants completed a Qualtrics survey containing a demographic questionnaire, as well as questions on Adverse Childhood Experiences (ACE), Adult Attachment Style, Money Beliefs and Behaviors, and Financial Transparency. The demographic questionnaire included participants' age, race, marital status, education, occupation, gross yearly income, and debt total which were used as control items in the current manuscript.

Adverse childhood experience. The adapted Adverse Childhood Experiences survey (ACE-IQ) includes 19 items that assess the frequency of adverse experiences during childhood, including subscales for verbal, physical, and sexual abuse in the family; the child-parent relationship, or child neglect; peer violence, such as bullying; and community violence, such as witnessing violence in the neighborhood (Boullier & Blair, 2018). A sample item from the ACE-IQ is: "*Did a parent, guardian, or other household member yell, scream, or swear at you, insult or humiliate you?*" Each subscale is scored on a Likert-type scale ranging from 1 (always) to 5 (refused) with higher scores indicating fewer adverse experiences during childhood. The ACE-IQ shows high internal validity for each of the subscales (all subscales $\alpha \geq 0.80$).

Adult attachment. The adapted Adult Attachment Scale (AAS; Collins & Read, 1990) assesses each participant for their attachment style, that is, the trust and security an individual feels when connecting with others, especially a partner. On an 18-item scale, it assesses if one has a secure, anxious, and avoidant/dependent attachment style in adulthood. The measure is broken into subscales of dependence, anxiety, and closeness regarding others. A sample item to assess an anxious attachment style states: "*I often worry that romantic partners don't really love me.*" Each item is scored on a Likert-type scale ranging from 1 (not at all characteristic to me) to 5 (very characteristic of me) with higher scores indicating a higher degree of having the attachment style in adulthood. The adult attachment scale shows high internal reliability ($\alpha = 0.80$).

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Money beliefs and behaviors*.* The adapted Money Beliefs and Behaviors scale is a 23-item scale used to assess participants' relationship with money, and how their beliefs and behaviors affect their money habits. The money beliefs and behaviors scale consists of six subscales of obsession (i.e., preoccupation with control and power around money), retention (i.e., worry about saving money), effort (i.e., recognition of the energy, resources, and time an individual puts into obtaining money and whether it is deserved), security (i.e., one's confidence about their money management), and inadequacy (i.e., feelings of not having enough money, particularly in relation to others). Each item is measured on a Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher scores indicate having greater levels of money belief and behavior. Sample items include: *"I always know exactly how much money I have in my bank, savings account, or credit union,"* and *"I put money ahead of pleasure."* The money beliefs and behavior scale have high internal reliability (α = 0.78).

Financial transparency. The financial transparency scale (Koochel et al., 2017) is a 26-item measure that consists of three subscales of financial partner togetherness (i.e, the extent to which the participants share and manage finances together with their partner), secrecy (i.e., the extent to which a participant is honest about finances with their partner), and trust (i.e., the extent to which a participant trusts their partner's financial management ability and discloses their own finances to their partner). The scale assesses the role that money plays within a relationship with a romantic partner, and how honest the participants are with a partner. Each item is assessed by a Likert-type scale, ranging from 1 (not at all likely) to 5 (very likely) with high scores indicating higher levels of financial transparency with a partner. Sample items include statements such as: *"Please indicate how likely you are to do the following…lie to your partner about a financial transaction."* The financial transparency scale shows high internal reliability (α = 0.83; Koochel et al., 2017).

Demographic Variables. Participant age, race, gender, debt, and education level were accounted for in the analysis as control variables. Participant age was calculated at the time of data collection by the reported birthdate of each participant. Participant race was assessed on a categorical eight-point self-report scale. Participant gender was assessed on a categorical three-point scale of female(1), male(2), and other(3). Participant debt was reported as a continuous item. And education level was assessed on a seven-point scale from "less than high school degree" (1) to "Graduate degree" (7).

Data Analysis

The current study utilized a structural equation model (SEM) examining the relationship between adverse childhood experiences, attachment style, money beliefs and behaviors, and financial transparency. Preliminary analyses examine a bi-variate correlational matrix across all study variables. Confirmatory factor analysis (CFA) was used to test the validity of measurement scales. Data was collected with SPSS 25 (IBM Corporation, 2017) and analyses were run through AMOS 24.0 (Arbuckle, 2014) to obtain estimates. Although there was minimal missing data in the current study, (1.7% of the tested variables), full information maximum likelihood (FIML) was used to account for missing data. FIML is preferable to other methods because it allows all available data to be utilized when estimating model parameters and standard errors (Enders, 2001). Control variables

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were modeled with the semi-partial method (Little, 2013). Standardized coefficients were reported in the analysis. A range of fit indices was used to assess the goodness-of-fit, including the Chi-square statistic/degrees of freedom ratio, comparative fit index (CFI), and the Root Mean Square Error Approximation (RMSEA).

RESULTS

Preliminary Analysis

A zero-order, bivariate, correlational matrix, as well as means, standard deviations, and skewness of the study are shown in Table 2. Preliminary findings showed high levels of strength exist between study variables. The skewness for all variables, except for race, age, ACE neglect, and ACE sexual abuse lie between -1 and 1 indicating the sample was representative of the general population. The skewness of each of these variables was as follows, race: 2.808, age: 1.092, ACE neglect: -1.142, and ACE sexual abuse: -1.578, respectively. Confirmatory factor analysis (CFA) results indicated that all primary assessments received an acceptable fit of the data and all factor loadings had a value higher than .41 with acceptable ranges for items on each subscale for ACEs (.41-.89); Attachment (.42-.89); Money Behaviors and Beliefs (.46-.85); and Financial Transparency (.74-.95). Hence, the scales had convergent validity.

Structural Equation Modeling

Structural Equation Modeling (SEM) was used to assess the relationships among ACEs, adult attachment, money beliefs and behaviors, and financial transparency. Figure 1 shows the significant standardized path coefficients. Model fit indices suggested the model fit the data reasonably well $\chi2(97, 500) = 329.84$, $p < .001$; RMSEA = .069; 95% CI [.061, .078]; CFI = .94.; TLI .84. $\chi2/df = 3.4$. ACE neglect was significantly and negatively associated with adult attachment anxiety (ß = -0.151, $p < .001$), meaning that if one experienced neglect as a child from their parent/guardian, they were more likely to report having an anxious attachment style in adulthood. ACE verbal abuse was significantly and positively associated with adult attachment closeness and adult attachment dependence (ß= 0.288, $p < .001$; ß= 0.251, $p < .001$; respectively). This means as greater amounts of verbal abuse were reported, participants were less likely to report closeness and dependence in their adult attachment style. There was also a trend between ACE verbal abuse and adult attachment anxiety (ß= -0.115, p = .06), meaning the greater the reported verbal abuse, there was some evidence of a greater likelihood of adult attachment anxiety reported. ACE child sexual abuse was negatively and significantly associated with adult attachment anxiety (ß = -0.226, p < .001), providing evidence for higher reported sexual abuse being associated with higher reports of anxious attachment in adulthood. Lastly, ACE child peer violence was positively and significantly associated with adult attachment dependence (ß= 0.138, $p < .01$), meaning that the greater the reported number of times one had experienced peer violence as a child, the more likely the participant reported a dependent adult attachment style. No significant relationships were found for ACE child physical abuse or ACE community violence were found as they relate to attachment styles in the study.

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Table 2. *Bivariate Correlational Matrix of Study Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.ACE Neglect																
2. ACE Verb Abuse	.553***															
3. ACE Sexual Abuse	.573***	.401***														
4. ACE Physical Abuse	.539***	.679***	.482***													
5. ACE Peer Violence	.320***	.445***	.257***	.391***												
6. ACE Community Violence	.490***	.481***	.416***	.464***	.532***											
7. Adult Attach Close	-.230***	-.323***	-.194***	-.219***	-.214***	-.165***										
8. Adult Attach Depend	-.316**	-.391***	-.247***	-.293***	-.333***	-.309***	.685***									
9. Adult Attach Anxiety	.365***	.289***	.389***	.255***	.198***	.263***	-.497***	-.663***								
10. Money Belief Obsession	496***	.205***	.469***	.235***	.117*	.358***	-.258***	-.394***	.556***							
11. Money Belief Retention	.490***	.238***	.484***	242***	.148**	.286***	-.296***	-.401***	.570***	.770***						
12. Money Belief Effort	-.0048	.050	-.044	.011	.047	-.030	-.060	-.092*	.012	-.041	.072					
13. Money Belief Security	-.0051	-.025	-.055	.015	-.023	.022	-.038	.023	-.027	.025	-.036	.057				
14. Money Belief Inadequacy	-.293***	-.286***	-.314***	-.264***	-.240***	-.210***	.348***	.446***	-.507***	-.453***	-.545***	-.269***	-.089*			
15. Financial Trans Togetherness	-.012	-.112*	.038	-.075	-.037	.005	.297***	.178***	-.097*	.035	-.011	-.148***	-.182***	.144**		
16. Financial Trans Secrecy	-.449***	-.268***	-.448***	-.320***	-.143**	-.314***	.261***	.355***	-.517***	-.701***	-.605***	.032	-.016	.407***	.94*	
17. Financial Trans Trust	-.126**	-.126**	-.022	-.103*	-.041	-.077	.313***	.249***	-.187***	-.130**	-.111*	-.076	-.087	.160***	.767***	.245***
Mean	10.25	5.94	14.23	6.44	5.46	9.63	19.54	15.88	15.15	32.48	8.60	7.15	7.24	10.57	62.7	11.786
Standard Deviation	2.41	1.93	3.12	1.82	1.64	2.22	3.94	4.89	7.12	15.04	3.48	2.42	1.65	4.12	18.21	3.54
Skewness	-1.19	-.483	-1.65	-.892	0.18	-.844	-.182	.31	.222	.57	.348	.138	.032	.013	-.448	-.777
Range	9.00	6.00	12.99	6.00	6.00	9.00	17.00	20.00	24.00	57.00	14.00	10.00	15.00	72.00	12.00	20.00
Range Minimum	3.00	2.00	4.00	2.00	2.00	3.00	10.00	5.00	6.00	12.00	3.00	2.00	3.00	18.00	3.00	5.00
Range Maximum	12.00	8.00	16.00	8.00	8.00	12.00	27.00	25.00	30.00	69.00	17.00	12.00	18.00	90.00	15.00	25.00

Note: *** indicates $p < .001$, ** indicates $p < .01$, and * indicates $p < .05$

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In turn, the adult attachment style of dependence was negatively and significantly related to the money belief and behavior of effort (ß = -0.181, p < .05), meaning the more likely a participant reported a dependent attachment style in adulthood, the more likely they were to believe they deserve the money they have. The adult attachment dependence was also positively and significantly associated with the money belief and behavior of inadequacy (ß = 0.166, p < .01), indicating a greater belief that the participants were not well off financially if they indicated an adult attachment style of dependence. In contrast, the adult attachment style of anxiety was positively and significantly associated with the money beliefs and behaviors of obsession and retention (ß = 0.531, p < .001; ß = 0. 543, p < .001; respectively), while negatively and significantly associated with the money belief and behavior of inadequacy (ß = -0.375, p < .001). In other words, the more likely participants reported an anxious adult attachment style, the more likely they were to report beliefs and behaviors of power and control associated with money, worry more about saving money, and believe they are less well off than others; respectively. No significant relationships were found between adult attachment closeness and any money belief and behavior. And no adult attachment style was associated with the money belief and behavior of security.

Lastly, findings provided evidence of many associations between money beliefs and behaviors with the financial transparency factors of partner togetherness, secrecy, and trust. The financial transparency characteristic of partner togetherness was negatively and significantly related to the money beliefs and behaviors of effort and security (ß = -0.093, p < .01; ß = -0.145, p < .01; respectively), and positively and significantly associated with inadequacy (ß = 0.156, p < .01). These associations indicate the more a participant felt their money was deserved, were less confident about money management, and believed they were well off compared to peers, the more likely they were to report sharing and doing money-related tasks as a couple. The financial transparency characteristic of secrecy was negatively and significantly associated with the money beliefs and behaviors of obsession and retention (ß = -0.544, p < .001; ß = -0.126, p < .01; respectively), while also being positively and significantly associated with inadequacy (ß = 0.095, p < .05). These paths indicate that participants who reported money beliefs and behaviors of being less controlling, less likely to worry about saving money, and believing they are well off compared to peers are more likely to report being honest about money in their relationship. No significant associations were found between money beliefs and behaviors and the financial transparency characteristic of trust. However, there was a positive trend between inadequacy and trust (ß = 0.105, p = .053) indicating a possible path between believing one is well off and increased trust in a partner's money management.

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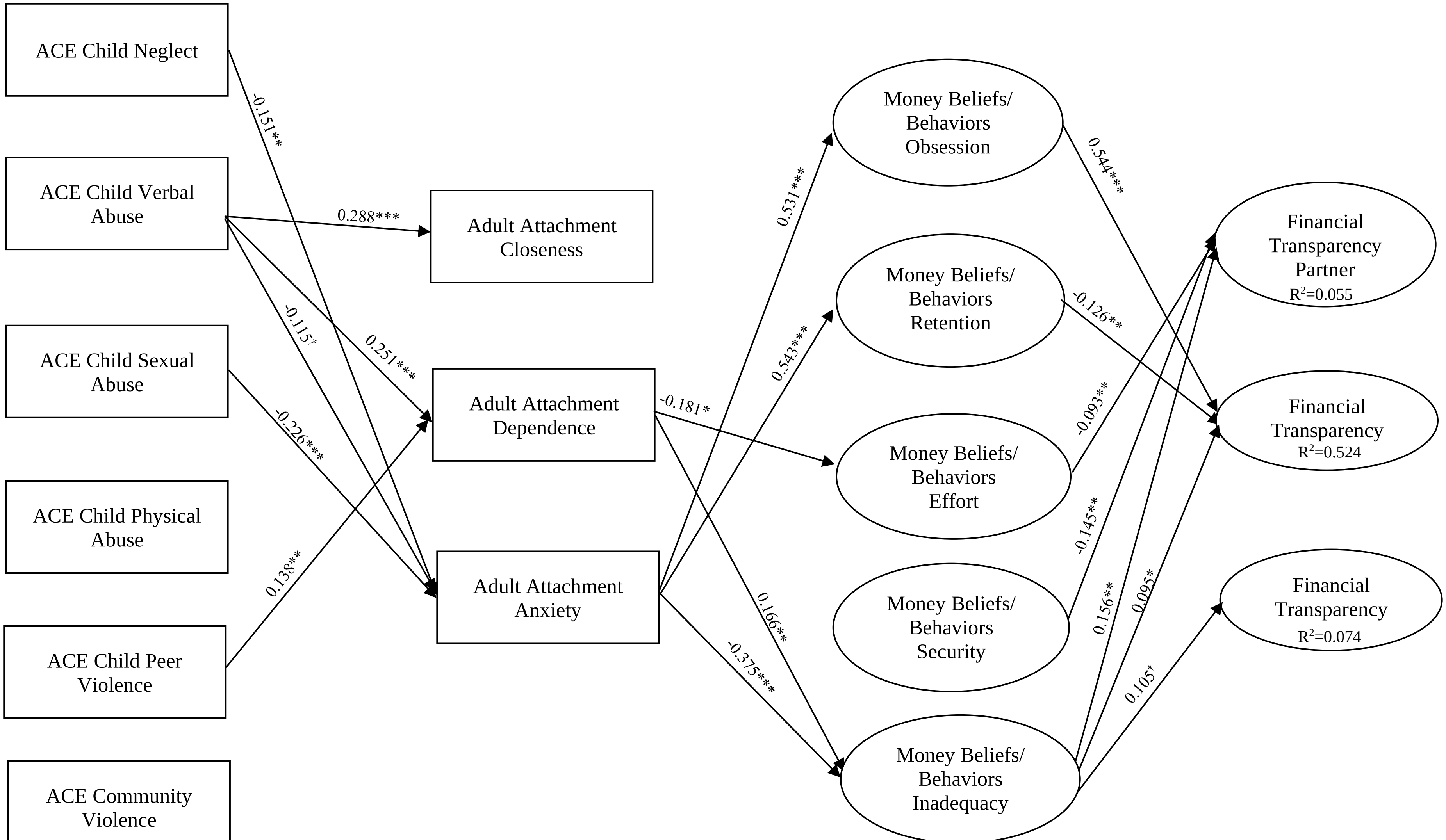
Figure 1.

Structural Equation Model of Adverse Childhood Experiences on Attachment, Money Behaviors and Beliefs, and Financial Transparency



$\chi 2(97, 500) = 329.84$, $p < .001$; RMSEA = .069; 95% CI [.061, .078]; CFI = .94.; TLI .84. $\chi 2/df = 3.4$. Standardized coefficients are shown. Significant paths are shown. *Note*: *** indicates $p< .001$, ** indicates $p< .01$, * indicates $p<.05$, and † <.06

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Sobel Test. The Sobel test was used to examine statistically significant indirect effects between ACEs and financial transparency. Although bootstrapping has become a popular choice for small sample sizes in recent research, the Sobel test remains a statistically rigorous method for examining indirect effects, and is intended for larger sample sizes; i.e., those over 100 participants (Koopman et al., 2014). Significant indirect pathways were found for ACE sexual abuse to adult attachment anxiety, and in turn, to the money beliefs and behaviors of obsession (z = -1.769, p <.05), retention (z = -1.891, p <.05), and inadequacy (z = 1.878, p <.05). There were also statistically significant indirect effects for the adult attachment of anxiety to the financial transparency characteristic of secrecy through the money beliefs and behaviors of obsession (z = -4.844, p <.001), retention (z = -2.502, p <.05) and inadequacy (z = -2.805, p <.01). These findings support the supposition that attachment styles in adulthood may be a notable pathway between childhood abuse and money beliefs and behaviors. In turn, findings also provide evidence of money beliefs and behaviors as a link between attachment style and financial transparency between partners.

DISCUSSION

The current study extends the existing literature by investigating how adverse childhood experiences (ACEs), such as abuse, neglect, and violence during early developmental periods may impact one's adult relational dynamics around money, particularly through their adult attachment style and financial beliefs and behaviors. The current study was exploratory in nature as there is little evidence in past research that suggests a link between early childhood traumas with financial behaviors and beliefs. ACEs, however, have been shown to have a lasting effect on our adult lives across a multitude of other relationship and behavior domains.

Overall, the findings provided support for the hypothesized model. As anticipated, an increase in the frequency of negative ACEs was associated with a decrease in secure attachment and an increase in insecure attachments (Hypothesis 1). The reported increase in frequency of the ACEs of neglect, verbal abuse, and sexual abuse was shown to have a greater relationship with the insecure attachment style of anxiety in adulthood. As the frequency increased for the ACEs of child verbal abuse and peer violence, participants were less likely to report an adult attachment of dependence. Additionally, a decrease in the reported frequency of the ACEs of verbal abuse was linked to the more secure attachment styles of closeness. Surprisingly, physical abuse and community violence did not show to have a significant relationship with adult attachment styles. This may simply be due to a low number of participants reporting they had experienced these specific adverse child traumas. In turn and as predicted, the insecure adult attachments of dependence and anxiety were associated with more maladaptive money beliefs and behaviors (Hypothesis 2), particularly with those of effort and inadequacy, and then obsession, retention, and inadequacy; respectively. In contrast to the hypothesized model, no maladaptive beliefs and behaviors were found to be significantly associated with the secure attachment of closeness in adulthood. Although the explanation for this lack of relationship needs to be further explored, it may be that insecure attachments have a greater impact on behavior and beliefs than secure attachments do. Some research suggests that insecure attachment styles are associated with greater beliefs that the world is more dangerous, uncaring, and competitive

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(Stackert & Burski, 2003), lending support to the findings of greater reported beliefs and behaviors around control, savings worries, lack of deserving money, and not believing one is well off in comparison to others. Lastly, as expected, the increase of maladaptive financial beliefs and behaviors increased reports of less financial transparency with a partner (Hypothesis 3). Findings indicated all of the reported money beliefs and behaviors subscales that were maladaptive were linked to less financial transparency for partner togetherness, secrecy, and/or trust. This is consistent with and provides supporting evidence with past research showing poor financial management behaviors are significantly associated with less relationship quality and supportive relationship behaviors (Barton, et al., 2015).

Pain-saturated narratives center on money for many individuals, couples, and families (Ross & Coambs, 2018). Previous research suggests that the loss of social connection in childhood may lead to the development of disordered financial behaviors as a way of attempting to re-establish those social relationships (Kasser, et al., 2004). It is theorized, from this prior research, that circumstances of abuse, neglect, and violence may be associated with this loss of connection. Zhou and Gao (2008) found that in the absence of social support, money may serve as a secondary pain management mechanism. This reliance on money as a pain-management mechanism may then impair financial management behavior processes, as well as the attachment relationship in adult intimate relationships (Mikulincer & Shaver, 2008).

Although this area of trauma, money, and relationships has not been fully explored, the findings are congruent with current research in that instances of neglect, abuse, and violence contribute to not forming secure and trusting attachments (Thomson & Jaque, 2017), which may, in turn, carry on into adult behaviors, beliefs, and relationships. Notably, the statistically significant indirect pathways, particularly with sexual abuse and the adult attachment style of anxiety to the financial transparency factor of secrecy through the money beliefs and behaviors of obsession (i.e., power and control), retention (i.e., worry about money), and inadequacy (i.e., comparison with others). High levels of anxiety are often indicative of an increased desire to control the situation or worry about what you or others are doing. This can manifest itself through constant monitoring or having worrying thoughts about money. These types of beliefs and behaviors associated with control, worry, and comparison with others likely manifest themselves in other areas of the relationship as well. However, the current data cannot address this at this time and a more directed study is suggested to ascertain how these areas of ACEs; adult attachment; money beliefs and behaviors; and financial transparency are associated with other financial and relationship variables. Additionally, future research is needed to expand the validity and generalizability of these preliminary findings.

Limitations

Limitations in the present study will provide guidelines for future research directions. The current study employs a cross-sectional research design, meaning that the findings should not be interpreted from a causal perspective. Examining how the study's constructs change over time in relation to the association of ACEs with future financial decision-making would provide greater confidence in the direction of effects provided by the

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current study. The current study is also limited in that the data did not explore the nature of dyadic relationships or partner effects. The study may also have been limited in the representativeness of the sample, due to the fact that the sample was mostly White, married, and educated. While a more diverse sample should be incorporated in future analyses, participant samples gathered from Amazon MTurk tend to be more representative of the US population when compared to participants recruited via in-person sampling techniques (Berinsky et al., 2012). Michailova et al. (2017) provided evidence that there is a possible gender difference between economic behavior and financial outcomes as a result of overconfidence, suggesting these findings should be explored further in terms of gender bias. Additionally, although an initial exploratory study and within the suggested range of an a priori statistical power analysis (Faul et al., 2007), a larger sample may be needed given the large number of direct paths in the analysis. Caution may be warranted in interpreting findings and generalizing to a larger population due to the possibility of increasing the margin of error. Consequently, future studies should utilize a greater sample size. Finally, participation bias must be considered due to the nature of MTurk participants taking multiple surveys and completing multiple online tasks. Considering this, it may be beneficial to compare the current results to other clinical or university samples. However, data collected from Amazon MTurk crowdsourcing processes, especially those used with quality control measures such as the current study, has been shown to be as or more reliable than samples collected via traditional methods (Buhrmester et al., 2011; Behrend et al. 2011; Goodman & Paolacci, 2017).

Practice Implications

Deepening the basis of understanding financial conflict serves to help inform new financial counseling, financial education, and money management policy decisions about how to work with families and money. Systemic and integrative practices may be necessary for financial practitioners to understand how trauma, relationship dynamics, and financial management behaviors may be associated with one another. Emerging fields, such as financial therapy, offer financial practitioners and educators new modalities to better aid clients holistically. Training and certifications through organizations such as the Financial Therapy Association can better prepare financial practitioners to address the complexities and reciprocal nature of ACEs, relational dynamics, and financial management. Financial counseling practices also need to understand and address the intra- and inter-relationship dynamics of their clients and their past.

A trauma-informed and trauma-focused perspective is imperative in light of the findings of this research. Financial practitioners' ability to conceptualize their clients through the lens of attachment and trauma creates multiple new pathways for supporting their clients along their journey of healing, relationships, and money. Professionals need to not only recognize problematic patterns with money but how other areas of life pain may be impinging on their client's ability to engage in their financial life. Working with a client and couple's trauma history and its relationship to their financial life requires a multimodal approach and conceptualization. In order to advance the care of clients, the interdisciplinary framework of interpersonal neurobiology (Siegel, 2006) may provide a more expansive view necessary to see the many ways that people function and what needs to happen in order to

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bring restoration into their lives. A significant component of interpersonal neurobiology includes working with a client's narrative. Working with narratives serves multiple purposes including but not limited to integration across multiple neurological networks in the brain, leading to increasing coherence and self-regulation (Zimmerman, 2017). The process of storytelling within the financial therapy, counseling, and planning practice is essential for healing and growth.

To assist in this process, a technique called Narrative Financial Therapy (NFT) may be able to assist clients in working through past money beliefs through story building (McCoy et al., 2013). NFT encourages clients to illustrate their own struggles with money as a story. NFT is crucial to implementing behavioral changes when it comes to improving financial well-being and behaviors. NFT intends to target one's underlying beliefs about money and create a new, positive narrative around money. NFT follows similar steps to financial planning – creating an alliance, collecting background information and understanding the client's narrative, setting goals, analyzing information and developing a plan, presenting the action plan, implementing this defined plan, and then monitoring performance (McCoy et al., 2013). NFT works to address both issues of financial literacy and couple/personal issues that accompany financial struggles. It is important to note that financial literacy training on its own is not enough to change money attitudes (Porto, 2016), making it necessary to include modalities such as NFT to provide this behavior change.

Financial practitioners must also understand the potential ethical and professional practice implications associated with managing traumas. There is a distinct difference between providing therapy for trauma and acknowledging that traumas have an impact on our financial management and developing a financial plan accordingly. Financial practitioners must stay within their scope of practice, and not work outside of their areas of expertise, training, and credentialing. Referrals to other professionals may be necessary, especially if the needs of the client are outside of their realm of expertise (Ross et al., 2016).

CONCLUSION

Past research indicates that adverse childhood experiences (ACEs) may have lasting and impactful associations on a range of outcomes in adulthood, including within the mental, physical, and relational domains. In consideration of maladaptive money beliefs and behaviors which impact our relationships, the current exploratory study analyzed the relationships between ACEs and relational financial transparency behaviors through styles of attachment and money beliefs and behaviors. Direct and indirect associations were found through these pathways, providing support to our understanding of how childhood adverse experiences may have a lasting impact on the inter- and intra-financial relational behaviors in adulthood.

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