Child Abuse & Neglect 80 (2018) 123–133

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

Do adverse childhood experiences predict adult interpersonal difficulties? The role of emotion dysregulation

Julia C. Poole[a,*], Keith S. Dobson[a], Dennis Pusch[b]

[a] University of Calgary, Calgary, AB, Canada
[b] Private Practice, Calgary, AB, Canada

ARTICLE INFO

Keywords:
Adverse childhood experiences
Interpersonal problems
Emotion dysregulation
Primary care

ABSTRACT

Adverse childhood experiences (ACEs) are risk factors for interpersonal difficulties in adulthood, however the mechanism that underlies this association is unknown. The current study investigated the association of a wide range of ACEs with interpersonal difficulties in adulthood, and tested whether emotion dysregulation mediated the relationship between ACEs and interpersonal difficulties. Patients over the age of 18 were recruited from primary care clinics (N = 4006). Participants completed self-report questionnaires that assessed ACEs, emotion dysregulation, and interpersonal difficulties. Results indicated that, after controlling for a range of demographic variables, each type of ACE significantly predicted increased interpersonal difficulties and that cumulative ACEs predicted increased interpersonal difficulties, $F(8, 3137) = 39.68$, $p < .001$, $R^2 = 0.09$. Further, emotion dysregulation mediated the association between ACEs and interpersonal difficulties, B = 0.79, SE = 0.09, 95% CI [0.64, 0.97]. These findings emphasize the role of childhood adversity on interpersonal functioning in adulthood, and highlight emotion dysregulation as a mechanism by which this association occurs. Results have the potential to inform preventative and treatment efforts to improve adaptive outcomes among individuals with a history of childhood adversity.

1. Do adverse childhood experiences predict adult interpersonal difficulties? The role of emotion dysregulation

Positive and meaningful connections with others are consistently associated with increased levels of happiness, self-esteem, fulfillment (Cast & Burke, 2002; Lakey, 2013) and, importantly, have been repeatedly shown to buffer the effects of stress (Chao, 2011). Indeed, individuals who engage in positive interpersonal relationships tend to report lower rates of depression (Lakey & Cronin, 2008), fewer posttraumatic stress disorder symptoms (Brewin, Andrews, & Valentine, 2000), and lower rates of negative affect and nonspecific psychological distress (Finch, Okun, Pool, & Ruehlman, 1999; Lakey, Vander Molen, Fles, & Andrews, 2016). Conversely, interpersonal difficulties are often identified as risk factors for the development and maintenance of mental health concerns, including increased levels of stress (Segrin, 2001; Shahar, Joiner, Zuroff, & Blatt, 2004), generalized anxiety disorder (Borkovec, Newman, Pincus, & Lytle, 2002; Eng & Heimberg, 2006), depression (Petty, Sachs-Ericsson, & Joiner, 2004; Vittengl, Clark, & Jarrett, 2003), and eating disorders (Fairburn, Cooper, & Shafran, 2003; Hartmann, Zeeck, & Barrett, 2010; Hopwood, Clarke, & Perez, 2007).

Given the strong associations between interpersonal relationships and various aspects of mental health and wellbeing, researchers have sought to elucidate predictors of interpersonal functioning. One factor that is increasingly recognized as a predictor of

* Corresponding author at: Department of Psychology, University of Calgary, 2500 University Drive NW, Calgary, Alberta, T2N 1N4, Canada.
E-mail address: jpoole@ucalgary.ca (J.C. Poole).

https://doi.org/10.1016/j.chiabu.2018.03.006
Received 4 October 2017; Received in revised form 17 February 2018; Accepted 2 March 2018

interpersonal difficulties across the lifespan is exposure to childhood adversity. Approximately 70% of North American adults report exposure to at least one type of adverse childhood experience (ACE), such as abuse, neglect, or household dysfunction (Felitti et al., 1998; Poole, Dobson, & Pusch, 2017a). ACEs have been repeatedly identified as a risk factor for the development of a range of intrapersonal concerns across the lifespan, including mental health problems (e.g., depression, anxiety) and physical health problems (e.g., chronic disease, increased health care utilization) (Chartier, Walker, & Naimark, 2010; Edwards, Anda, Felitti, & Dube, 2004; Poole, Dobson, & Pusch, 2017a; Poole, Dobson, & Pusch, 2017b). Although less attention has been paid to the association between ACEs and interpersonal outcomes, mounting evidence suggests that adults with a history of childhood adversity may experience increased difficulties across a number of interpersonal relationship contexts.

Relative to other types of ACEs, greater attention has been paid to the effects of sexual abuse and physical abuse on interpersonal functioning. As compared to women with no history of abuse, those with histories of lifetime sexual and/or physical abuse tend to report greater interpersonal difficulties, including sensitivity to criticism, inability to hear other viewpoints, and difficulty standing up for themselves (Van der Kolk, Roth, Pelcovitz, & Mandel, 1993). Women who report a history of physical and/or sexual abuse in childhood specifically report greater fear of intimacy and lower quality of past interpersonal relationships as compared to women with no childhood abuse (Davis, Petretic-Jackson, & Ting, 2001). Childhood sexual abuse has also been associated with increased fear of intimacy, difficulty forming trusting relationships, and anxiety in interpersonal relationships (Davis & Petretic-Jackson, 2000; Davis et al., 2001), and childhood physical abuse has been linked to subsequent relationship difficulties, such as lower desires to reveal feelings to others and to engage in close relationships and reduced willingness to share feelings and thoughts with others (Ducharme, Koverola, & Battle, 1997).

While the extant literature provides support for the association between certain ACEs and interpersonal difficulties in adulthood, three limitations can be noted regarding previous findings. First, little attention has been paid to the effects of other types of ACEs, such as physical neglect and emotional neglect and various forms of household dysfunction (e.g., interparental conflict and parental substance abuse, mental illness, criminal activity, and divorce/separation). These types of ACEs are common and have been shown to predict a range of poor intrapersonal outcomes. As such, evaluation of the association of a wider range of ACEs with interpersonal difficulties is warranted. Second, the cumulative effect of co-occurring ACEs on interpersonal functioning has not been adequately evaluated. Past research has consistently demonstrated that ACEs tend to co-occur and that multiple ACEs exert a dose-response effect on health concerns, wherein exposure to multiple types of ACEs corresponds with increased risk of developing health concerns (Felitti et al., 1998; Poole, Dobson, & Pusch, 2017a). Accordingly, many researchers have highlighted the importance of assessing the cumulative effects of multiple ACEs (e.g., Davis et al., 2001; Dong et al., 2004). Finally, despite the relatively well-established associations between certain ACEs and subsequent interpersonal difficulties, the mechanism(s) that underline the association between childhood adversity and adult interpersonal difficulties remain unclear.

1.1. Emotion dysregulation as a mediator

Developmental research has demonstrated that individuals who experience childhood adversity, such as abuse and/or neglect, tend to report impaired abilities to identify, interpret, and/or regulate their emotions effectively (Cloitre et al., 2009; Poole, Dobson, & Pusch, 2017b; Shipman, Zeman, Penza, & Champion, 2000). A review of empirical research indicated that, across studies that employed different methodologies with varying age groups, children living in risky family environments (i.e., those characterized by conflict and aggression and by cold, unsupportive, or neglectful relationships) were more likely than their peers to cope with stressors via maladaptive emotion regulation strategies, such as distraction and escape (Repetti, Taylor, & Seeman, 2002). These results are consistent with theoretical frameworks, which suggest that children who grow up in turbulent or unpredictable environments will develop unique strategies to manage their emotions in order to facilitate adaptation within the immediate social environment (e.g., Campos, Campos, & Barrett, 1989). While these unique emotion regulation strategies (e.g., distraction, suppression) may be adaptive in the short-term, they tend to interfere with successful adaptation outside of the immediate environment and may pose a significant risk for long-term adjustment (Cook, Greenberg, & Kusche, 1994; Rogosch, Cicchetti, & Aber, 1995).

Emotion regulation is conceptualized as one's abilities to identify, monitor, and respond to emotional experiences given the demands of a specific context (Gratz & Roemer, 2004). Emotion regulation influences interpersonal interactions indirectly, as emotion regulation abilities assist in the interpretation of internal and social cues and thereby guide social behavior (Fischer & Manstead, 2008). Emotions also serve communicative and social functions, convey information about others' intentions, and coordinate social encounters (Keltner & Haidt, 2001). Indeed, research suggests that the development of emotion regulation skills enables children to adapt successfully within their social environment, while emotion dysregulation places children at risk for subsequent interpersonal difficulties, including reduced empathy, poor control over affective expression, and reduced acceptance by peers (Cole, Michel, & Teti, 1994 ; Kim & Cicchetti, 2010).

Research among children has revealed associations among child maltreatment (e.g., neglect and emotional, physical, and sexual abuse), emotion regulation, and peer relations. These data generally support the salient role of emotion regulation as a mechanism by which earlier child maltreatment may lead to later difficulties in peer relations (e.g., Kim & Cicchetti, 2010). To date, however, no research has evaluated the associations among childhood adversity and adult emotion dysregulation and interpersonal difficulties.

1.2. Overview of the current study

The objectives of the current study were twofold. First, we aimed to comprehensively evaluate the associations between a range of ACEs and interpersonal difficulties. Specifically, we hypothesized that (1) there would be a positive association between cumulative

ACE score and interpersonal difficulties, and (2) each type of ACE would be positively associated with interpersonal difficulties. Second, we aimed to elucidate the mechanism by which ACEs exert their influence on interpersonal difficulties. Specifically, we hypothesized that: (3) emotion dysregulation would mediate the relationship between cumulative ACE score and interpersonal difficulties in adulthood, and that: (4) emotion dysregulation would mediate the association between each type of ACE and interpersonal difficulties in adulthood.

2. Methods

2.1. Participants

A total of 4006 primary care patients aged 18 years and older participated in the embrACE Study. From October 2014 to July 2015, participants were recruited from 11 primary care clinics in the greater Calgary, Alberta area. The embrACE Study was approved by the University of Calgary's Human Research Ethics Board.

2.2. Procedure

Physicians at primary care clinics in Calgary, Alberta and surrounding areas were invited to participate in the study. The time spent recruiting patients at each participating clinic was, on average, approximately six weeks. A compensation of CAD $1000 was provided to each participating clinic.

To recruit participants, trained research assistants approached patients in clinic waiting areas while patients waited to see their physician. Following a brief description of the embrACE Study, willing patients were asked to provide written informed consent and their contact information. Participants were provided with an option to complete the study questionnaire package either in online or paper format. Individuals who chose to complete the online questionnaire (n = 2737) were given written instructions to access the online survey, which expired two weeks following initiation. Individuals who chose to complete the paper survey (n = 1269) were given the questionnaire package and a pre-addressed and pre-paid envelope in order to mail the completed questionnaire package back to the research team. Each participant who completed the questionnaire package was offered compensation in the form of a $25.00 gift card.

2.3. Measures

2.3.1. Demographic information

The demographic questionnaire included items regarding participants' age, gender, ethnicity, education, annual household income, marital status, and employment status. For use as covariates, all nominal and ordinal values (i.e. ethnicity, education, income, marital status, employment) were dummy coded.

2.3.2. Adverse childhood experiences (ACEs)

The *Adverse Childhood Experiences (ACE) Questionnaire* (Dong et al., 2004; Felitti et al., 1998) was originally adapted from a variety of other self-report questionnaires, including the Conflict Tactics Scale (Straus, 1979), The Child Trauma Questionnaire (Bernstein et al., 2003), and the Wyatt (1985) questions on sexual abuse. The ACE Questionnaire consists of 29 items, which reference experiences of abuse, neglect, and household dysfunction prior to the age of 18 years. Participants are asked to indicate the degree to which they experienced these events using response options of "Never", "Once or twice", "Sometimes", "Often, or "Very Often". Scoring decisions were based on previous ACE research (e.g., Dong et al., 2004; Felitti et al., 1998), which codes the 10 types of ACEs (i.e. emotional, physical, and sexual abuse; emotional and physical neglect; five types of household dysfunction) as binary variables (did not occur: "0" occurred: "1"). The "total ACE score" (range: 0–10) is based on the summed total number of ACEs, and is used to assess the cumulative effect of multiple ACEs.

Previous research has provided evidence for the reliability of the ACE Questionnaire (κ = 0.64) (Dube, Williamson, Thompson, Felitti, & Anda, 2004). Further, an earlier phase of the embrACE Study indicated that the ACE Questionnaire is appropriate for use with the current sample. The measure demonstrated excellent internal consistency (α = 0.95) and construct validity (correlated significantly with both the Child Abuse and Trauma Scale (CATS; r = 0.94), and the Childhood Trauma Questionnaire (CTQ; r = 0.95) (Dobson et al., 2015).

2.3.3. Interpersonal difficulties

The *Inventory of Interpersonal Problems-32 (IIP-32)* (Barkham, Hardy, & Startup, 1996) consists of 32 items that assess difficulties (i.e., either being too high or too low) on six dimensions of interpersonal difficulties: domineering, vindictive, cold/distant, socially inhibited, non-assertive, overly accommodating, self-sacrificing, and intrusive/needy. Items are rated on a 5-point Likert scale ranging from 0 ("not at all") to 4 ("extremely"). Higher total scores on the subscales indicate greater interpersonal difficulties. Reports from previous studies indicate validity and internal consistency (α = .86) (Barkham et al., 1996; Hughes & Barkham, 2005). In the current study, the internal reliability of the IIP-32 total score was .93.

2.3.4. Emotion dysregulation

The *Difficulties in Emotion Regulation Scale (DERS)* (Gratz & Roemer, 2004) consists of 36-items. The items capture six dimensions

of emotion dysregulation: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. All items (e.g., "I experience my emotions as overwhelming and out of control") are rated on a 5-point scale, from 1 (almost never; 0–10%) to 5 (almost always; 91–100%). Total scores range from 36 to 180, where higher scores indicate greater emotion dysregulation. Previous research has reported strong test-retest reliability and construct and predictive validity of the DERS (Gratz & Roemer, 2004; Ritschel, Tone, Schoemann, & Lim, 2015). In the current study, the internal reliability of the DERS total score was .84.

3. Statistical analyses

All data met assumptions of multicollinearity, linearity, homoscedasticity, and normally distributed errors. Missing values analyses (e.g., Little's MCAR test, *t*-tests) indicated that missing data were missing at random and therefore did not reflect selection bias. As such, list-wise deletion was used to handle all missing data. One-way ANOVAs were used to evaluate differences in responses to self-reported data as a function of survey modality (i.e., online vs. paper questionnaire). Differences between the two methods of administration were statistically non-significant, and the effect sizes for differences on the measures of interest were small and of limited practical significance (Cohen, 1988). Accordingly, all participants were collapsed into a single group for subsequent analyses. To rule out the possibility that study results were due to the effects of other factors, a range of covariates were included in all analyses. These covariates included age, gender, ethnicity, education, income, marital status, and employment status, as each of these factors have been shown to influence the quality of interpersonal relationships.

To examine the extent to which there was a positive association between cumulative ACE score and interpersonal difficulties (Hypothesis 1), a two-stage hierarchical linear regression analysis was conducted with continuous, total scores on the IIP-32 as the dependent variable. The predictors (i.e. independent variables) included covariates (entered as the first block in the model) and total ACE score (entered in the second block). To evaluate the association between each type of ACE with interpersonal difficulties (Hypothesis 2), 10 similar two-stage hierarchical linear regression analyses were conducted, but where the total ACE score was replaced with the score for each type of ACE (i.e., "did not occur" (0), "did occur" (1)).

To examine whether emotion dysregulation mediated the association between ACEs and interpersonal difficulties (Hypothesis 3), PROCESS macro (Hayes, 2013; Model 4) was used to obtain biased corrected 95% bootstrapped confidence intervals (CIs) of the indirect effect (5000 iterations). The indirect effect of total ACEs (independent variable) was tested as a predictor of interpersonal difficulties (dependent variable) through emotion dysregulation (mediator). To evaluate whether emotion dysregulation mediated the association between each type of ACE and interpersonal difficulties (Hypothesis 4), 10 similar mediation analyses were conducted, but where the total ACE score was replaced with the score for each type of ACE as the independent variable. The final sample sizes for all mediation analyses (range of $N = 2975$ to $N = 3001$) exceeded recommended minimum sample sizes for mediation analyses (e.g., Fritz & MacKinnon, 2007).

4. Results

4.1. Descriptive data

The descriptive data for the sample is summarized in Table 1. Of the total sample ($N = 3922$), almost 70% of the sample ($n = 2663$; 69.1%) reported at least one type of ACE and almost one of every five participants reported four or more ACEs ($n = 708$; 18.1%). The most common ACE reported was growing up with a mentally ill household member ($n = 1736$; 44.3%) followed by household substance use ($n = 1195$; 30.5%). Additionally, 24.6% of the sample reported parental separation or divorce, 20.3% sexual abuse, 15.6% emotional abuse, 12.9% physical abuse, 12.8% inter-parental violence, 11.5% emotional neglect, 8.3% incarcerated household member, and 7.1% physical neglect. Table 2 presents the means, standard deviations, and correlations between the main variables of interest (i.e. total ACE, DERS, and IIP-32 scores). All three variables were significantly correlated with each other ($p < .001$).

4.2. The association between ACEs and interpersonal difficulties

A hierarchical linear regression analyses supported the first hypothesis, as there was a positive association between cumulative ACE score and interpersonal difficulties (see Fig. 1 and Table 3). The covariates entered on the first block significantly predicted interpersonal difficulties, $F(7, 3138) = 11.85$, $p < .001$, $R^2 = 0.03$, Adjusted $R^2 = 0.02$, but the total ACE score entered on the second block further significantly added to this prediction, $F(8, 3137) = 39.68$, $p < .001$, $R^2 = 0.09$, Adjusted $R^2 = 0.09$. Thus, the total ACE score accounted for 6% of explained variance in interpersonal difficulties, beyond covariate effects. Additionally, subsequent hierarchical regression analyses supported the second hypothesis, that each *type* of ACE would be positively associated with interpersonal difficulties, beyond effects of the covariates. The effect of each type of ACE was statistically significant (all p values $< .001$), even when using Bonferroni adjusted alpha levels of .005 per test (.05/10). Relative to other types of ACEs, variance in interpersonal difficulties was explained least by parental divorce/ separation, $F(8, 3126) = 13.88$, $p < .001$ (accounted for .8% of the variance) and household crime, $F(8, 3130) = 15.10$, $p < .001$ (accounted for 1.1% of variance) and was explained most by emotional abuse, $F(8, 3127) = 26.14$, $p < .001$ (accounted for 3.7% of variance) and emotional neglect, $F(8, 3132) = 27.19$, $p < .001$ (4.0%).

Table 1
Demographic characteristics of the sample.

Variable	*n*	*%/M(SD)*
Age (Mean)	3546	44.18(17.00)
Gender		
Male	1241	31.7%
Female	2673	68.3%
Education		
Less than high school	199	5.1%
High school or equiv.	601	15.4%
Some post-secondary	871	22.3%
Post-secondary	1841	47.1%
Graduate degree	399	10.2%
Income		
Less than 20,000	382	9.9%
20,000–39,999	473	12.3%
40,000–59,999	564	14.7%
60,000–79,999	536	14.0%
Greater than 80,000	1886	49.1%
Marital Status		
Married/Common Law	2509	64.2%
Never married	891	22.8%
Widowed	107	2.7%
Separated/Divorced	401	9.6%
Employment		
Full-Time	1824	46.7%
Part-Time	832	21.3%
Unemployed	603	15.4%
Retired	647	16.6%
Ethnicity		
Caucasian	3237	82.9%
African American	38	1.0%
Asian	388	10.0%
First Nations	34	0.9%
Other	208	5.3%
Adverse Childhood Experiences (ACES)		
0	1192	30.9%
1	905	23.5%
2	642	16.7%
3	408	10.6%
4 or more	708	18.4%

Table 2
Correlations among ACEs, emotion dysregulation, and interpersonal difficulties (means and standard deviations on the diagonal).

	ACEs	DERS	IIP
ACEs	1.91 (2.10)		
DERS	0.24***	83.60 (14.70)	
IIP	0.28***	0.35***	42.71 (24.38)

Note. ***Correlation is significant at < .0.001 level (2-tailed). ACEs = total score on the Adverse Childhood Experiences Questionnaire; DERS = Difficulties in Emotion Regulation Scale; IIP = Inventory of Interpersonal Problems.

4.3. The mediating role of interpersonal difficulties

Results of the mediation analysis supported the third hypothesis, as emotion dysregulation mediated the relationship between cumulative ACE score and interpersonal difficulties in adulthood (see Fig. 2). Specifically, greater total ACE scores significantly predicted more interpersonal difficulties, B = 2.27, SE = 0.20, t(2975) = 11.20, $p < .001$. Greater ACEs also predicated greater emotion dysregulation, B = 1.52, SE = 0.12, t(2975) = 12.74, $p < .001$. Emotion dysregulation was a significant predictor of interpersonal difficulties when controlling for ACEs, B = 0.52, SE = 0.03, t(2975) = 17.09, $p < .001$. There was also a significant indirect effect of ACEs on interpersonal difficulties via emotion dysregulation, B = 0.79, SE = 0.09, 95% CI [0.64, 0.97], establishing a mediation effect (Table 4).

Results of additional mediation analyses supported the fourth hypothesis, as the mediation model was significant for each type of

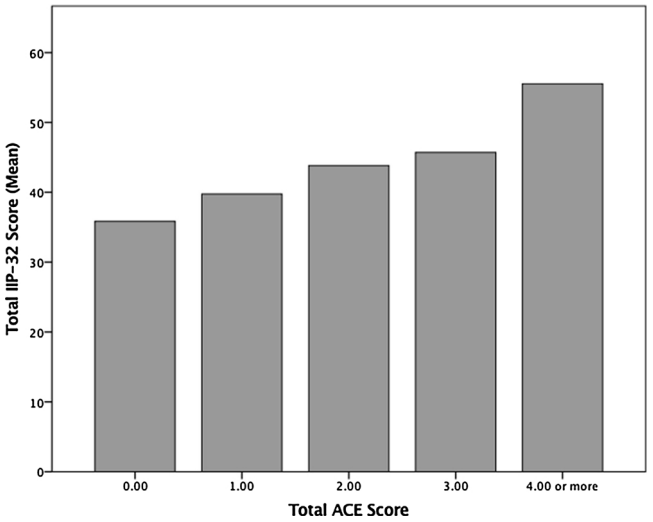

Fig. 1. The relationship between total ACE score and mean IIP-32 score.

Table 3
Hierarchical regression model for the Inventory of Interpersonal Problems-32 (IIP-32).

Block	R^2	Model	b	SE-b	Beta	t	*p*
1	0.03	(Constant)***	52.29	4.06		12.88	< .001
		Age	−0.06	0.03	−0.04	−1.87	.06
		Gender	0.57	0.94	0.01	0.61	.54
		Ethnicity**	3.23	1.20	0.05	2.69	< .01
		Education***	−4.47	0.90	−0.09	−4.98	< .001
		Income***	−4.14	0.94	−0.08	−4.41	< .001
		Marital status	1.44	1.00	0.03	1.44	.15
		Employment	−0.33	1.01	−0.01	−0.32	.75
2	0.09	(Constant)***	42.85	3.97		10.80	< .001
		Age	−0.04	0.03	−0.03	−1.40	.16
		Gender	−0.76	0.91	−0.01	−0.83	.41
		Ethnicity**	3.95	1.16	0.06	3.40	< .01
		Education***	−3.22	0.87	−0.07	−3.70	< .001
		Income***	−3.25	0.91	−0.07	−3.59	< .001
		Marital status	1.40	0.96	0.03	1.46	.15
		Employment	0.54	0.98	0.01	0.55	.59
		Total ACEs***	3.04	0.20	0.26	15.11	< .001

Note. $^{**}p < .01$, $^{***}p < .001$.

ACE: emotional abuse (*index* = 3.07, *SE* = 0.42, 95% CI [2.29, 3.95]), physical abuse (*index* = 2.08, *SE* = 0.41, 95% CI [1.28, 2.92]), sexual abuse (*index* = 2.06, *SE* = 0.34, 95% CI [1.41, 2.74]), emotional neglect (*index* = 3.23, *SE* = 0.51, 95% CI [2.27, 4.27]), physical neglect (*index* = 2.46, *SE* = 0.64, 95% CI [1.23, 3.75]), inter-parental violence (*index* = 2.45, *SE* = 0.43, 95% CI [1.70, 3.40]), parental separation or divorce (*index* = 1.31, *SE* = 0.31, 95% CI [0.72, 1.94]), household substance use (*index* = 1.75, *SE* = 0.30, 95% CI [1.19, 2.39]), household mental illness (*index* = 2.80, *SE* = 0.31, 95% CI [2.24, 3.42]), incarcerated household member (*index* = 2.43, *SE* = 0.56, 95% CI [1.34, 3.55]). Thus, each type of ACE significantly increased the chances that respondents would reported increased interpersonal difficulties via emotion dysregulation.

5. Discussion

Although ACEs have been widely examined as risk factors for poor intrapersonal outcomes such as mental and physical health problems, previous research has not adequately investigated the association between ACEs and interpersonal outcomes. The relatively few studies to evaluate the association between ACEs and interpersonal functioning were generally limited by narrow definitions of childhood adversity (e.g., evaluation of only sexual abuse) and related failures to address the effects of cumulative ACEs. Further, no research had examined potential mechanisms by which ACEs exert their influence on adult interpersonal functioning. To address these gaps in the literature, the current study examined the individual and cumulative effects of a wide range of ACEs on interpersonal difficulties, and the role of emotion dysregulation as a mediator of the association between ACEs and interpersonal difficulties.

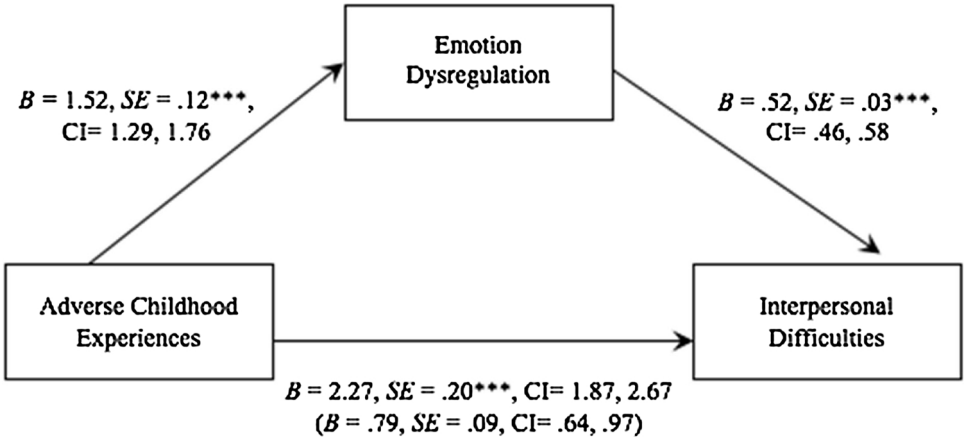

Fig. 2. Mediation model with adverse childhood experiences as the independent variable, emotion dysregulation as the mediator, and interpersonal difficulties as the dependent variable. The unstandardized coefficients and standard error shown in parentheses reflect the inclusion of the mediator in the equation. Unstandardized coefficients and standard error with an asterisk indicates a significant path, $p < .001$.

Table 4
Path coefficients from the mediation analysis.

	Emotion dysregulation (Mediator variable)		Interpersonal Difficulties (Dependent variable)	
Predictor	*B* (SE)	95% CI	*B*	95% CI
ACEs	1.5 (0.12)***	1.29–1.76	2.27 (0.20)***	1.87–2.67
Emotion dysregulation	–	–	0.52 (0.03)***	0.46–0.58
Age	−0.18 (0.02)***	−0.21 to −0.14	0.06 (0.03)*	0.01–0.12
Gender	2.50 (0.54)***	1.45–3.56	−2.39 (0.89)**	−4.14 to −0.64
Ethnicity	−0.13 (0.69)	−1.48 to 1.22	3.92 (1.14)***	1.70–6.15
Education	−0.09 (0.52)	−1.10 to 0.92	−3.31 (0.85)***	−4.98 to −1.64
Income	−1.01 (0.54)	−2.06 to 0.05	−2.66 (0.89)*	−4.40 to −0.92
Marital status	3.51 (0.57)***	2.39–4.63	0.09 (0.95)	−1.78 to 1.95
Employment status	2.82 (0.58)***	1.67–3.96	1.14 (0.97)	−3.03 to 0.76

Notes. N = 2975. CI = confidence interval. Index of mediation = 0.79, *SE* = 0.09, 95% CI [0.63, 0.97].
* p < .05.
** $p < .01$.
*** $p < .001$.

Almost 70% of respondents in the current study reported a history of at least one type of ACE, and almost one in five reported four or more types of ACEs. Consistent with results of previous research (e.g., Davis et al., 2001; Drapeau & Perry, 2004; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Ducharme et al., 1997), experiences of childhood adversity were positively associated with interpersonal difficulties in adulthood. Thus, data from the current study are consistent with previous research on intrapersonal outcomes, which reveal a dose-response effect of multiple ACEs wherein increasing cumulative exposure to childhood adversity corresponds with greater dysfunction later in life (e.g., Fergusson, Boden, & Horwood, 2008; Hovens et al., 2010; Jewkes, Dunkle, Nduna, Jama, & Puren, 2010; Welch & Fairburn, 1996).

The current study also found that each of the 10 types of ACEs were significantly associated with interpersonal difficulties in adulthood. Relative to other types of ACEs, those of an emotional nature (i.e. emotional abuse and emotional neglect) explained more variability in interpersonal difficulties. This is an important finding, given that, with some exceptions (e.g., Messman-Moore & Coates, 2007; Varia & Abidin, 1999), previous research on interpersonal functioning has focused primarily on the effects of sexual and physical abuse. Some researchers have argued that emotional childhood trauma may be particularly detrimental to adult adjustment, as emotional abuse often co-occurs with other forms of abuse, thereby intensifying its influence (Chapman et al., 2004; Ferguson & Dacey, 1997). Further, emotional abuse and/ or neglect may contribute to negative self-perceptions that may negatively influence interpersonal relationships, self-esteem, and confidence in relationships (e.g., Finzi-Dottan & Karu, 2006; Rose & Abramson, 1992). Future research may seek to explore further the potentially unique role of emotional abuse and neglect on interpersonal functioning.

A primary aim of the current study was to evaluate a potential mechanism that underlies the association between cumulative exposure to childhood adversity and interpersonal difficulties. The finding that emotion dysregulation mediates the association between ACEs and interpersonal difficulties is consistent with empirical research studies that have reported impaired emotion regulation abilities among both adults with a history of ACEs (Burns, Jackson, & Harding, 2010; Stevens et al., 2013) and among adults who report increased interpersonal difficulties (Cloitre, Miranda, Stovall-McClough, & Han, 2005). Although no study has evaluated the role of emotion dysregulation as a mechanism by which childhood adversity influences interpersonal difficulties among

adults, results from a longitudinal study conducted by Kim and Cicchetti (2010) indicated that child maltreatment factors (e.g., neglect, physical abuse and/or sexual abuse) were associated with impaired emotion regulation abilities among children, which indirectly predicted peer rejection one year later.

The results of the current mediation analysis may be conceptualized from the perspective of attachment theory, which highlights the critical role that parents and other caregivers play in helping children to regulate their emotions and to develop essential skills for the initiation and maintainance of positive interpersonal relationships later in life (Ainsworth, 1979; Bowlby, 1969). Proximity and close contact with a sensitive caregiver is thought to promote feelings of security, love, confidence, and interpersonal effectiveness (Hazan & Shaver, 1994). Importantly, sensitive caregivers play a critical role in reducing an infant's arousal following experiences of negative affect, by calming the infant and helping him/ her learn to return to a tolerable emotional state. As an infant becomes confident in the caregiver's capacity to provide regulatory assistance, the child also gains confidence in his or her own capacities for regulation and develops trust in the helpfulness of others. Longitudinal research has identified robust links between secure attachment and general indicators of increased social and emotional competence throughout the lifespan, including greater empathy and perspective taking abilities, mutual friendships and wider social encounters, notable leadership qualities, and adaptive emotional tone within adult romatic relationships (see Sroufe, 2005, for a review).

Conversely, children who do not have access to sensitive caregivers or who do not feel safe in their environment are less likely to receive opportunities to learn constructive strategies by which to regulate their emotional states (Calkins & Hill, 2007; Repetti et al., 2002). Young children whose attachment figures respond to negative affect in overly emotional or chaotic ways may come to internalize their own distress as unmanageable. Consequently, these children may become overresponsive to their own emotional reactions and/ or develop a distorted sense of self-reliance (e.g., "No one else can or will help me, so I must get through this alone"). Further, results from a recent study by Murphy et al. (2014) suggest that individuals with a history of childhood adversity, particularly those that occurred in the absence of emotional support from caregivers, tend to demonstrate pronounced difficulties making sense of their childhood history as adults. Based on classificaions from the Adult Attachment Interview (AAI; Main, Hesse, & Goldwyn, 2008), the authors found that women with a history of ACEs were more likely to refer to loss and abuse experiences in an 'unresolved' manner (e.g., "I deserved it", "it taught me a lesson") or a 'cannot classify' manner (e.g., devaluing/ derogatory toward one parent and passive and fearful regarding the other parent), relative to women with no history of ACEs. Indeed, failure to develop secure attachments with caregivers during early childhood has been associated with subsequent difficulties communicating, managing, and making sense of emotions and with developing positive relationships with peers and romantic partners across the lifespan (Sroufe, 2005). Results of the mediation model may also be explained by impairments in neurobiological systems related to stress and emotion regulation (De Bellis & Thomas, 2003; Heim & Nemeroff, 2001; Repetti et al., 2002). Children who report ACEs tend to exhibit dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis following stressors (Gunnar & Adam, 2012) and these impairments have also been seen among adults with a history of child adversity (Tarullo & Gunnar, 2006). Dysregulation of the HPA axis is associated with high emotional reactivity (Repetti et al., 2002) and compromised abilities to effectively identify and regulate emotions (Gunnar & Quevedo, 2007). Further, dysregulation of the HPA axis has been shown to predict increased interpersonal difficulties among adults, such as increased marital dissolution and dissatisfaction over time (Kiecolt-Glaser, Bane, Glaser, & Malarkey, 2003). Future research is needed to determine whether changes to biological stress systems parallel the associations described here.

5.1. Implications

The results of the present study underscore the importance of assessing for interpersonal difficulties among adults with a history of childhood adversity, and for trauma history among individuals who present with interpersonal difficulties. Taken together, these results contribute to growing evidence for the effects of childhood adversity on adult functioning, in that they demonstrate the salient association between ACEs and interpersonal functioning. The findings that each type of ACE predicts interpersonal difficulties in adulthood and that this risk accumulates with increased exposure to cumulative ACEs have important implications for future research. Specifically, results suggest that future research would do well to assess for a wide range of ACEs.

The current results also suggest potential targets for the treatment of individuals with a history of childhood adversity. Although ACEs represent a distal factor that cannot be modified later in life, emotion dysregulation and interpersonal difficulties both represent modifiable treatment targets (e.g., Berking et al., 2008; Cloitre et al., 2010; Robins, Schmidt, & Linehan, 2004). Furthermore, emotion dysregulation and interpersonal difficulties have each been identified as potent risk factors for the development of mental health concerns, such as PTSD (Cloitre et al., 2005). As such, findings from the current study support the idea of focusing on emotion dysregulation and interpersonal difficulties in preventative efforts among non-clinical samples with a history of ACEs who may be at increased risk for the development of future mental health concerns.

5.2. Limitations

Several limitations of the current study require consideration. First, the data are cross-sectional, thus firm conclusions cannot be drawn regarding causality in the relations among the variables. For instance, it may be possible that increased interpersonal difficulties precede experiences of childhood adversity or that increased interpersonal difficulties lead to emotion dysregulation. These concerns are alleviated by previous studies that have used longitudinal designs to demonstrate that ACEs lead to emotion dysregulation (e.g., Kim-Spoon, Cicchetti, & Rogosch, 2013) and interpersonal difficulties (e.g., Lansford et al., 2002), and that emotion dysregulation can lead to impairments in interpersonal functioning (e.g., Kim & Cicchetti, 2010). Future prospective research,

however, would strengthen the evidence for the causal nature of the relationships evaluated here.

Second, the current study is limited by the exclusive use of self-report data, which may be susceptible to response bias. Although all measures demonstrated strong psychometric properties, additional modes of data collection (e.g., substantiated reports of child abuse/neglect, laboratory-based observational methods to measure emotion dysregulation) would strengthen and extend the findings reported here. Relatedly, it is possible that results of the current study may be limited by self-selection biases. A total of 4006 completed the current study, however data were not collected on the number of patients who were either (a) approached but not interested in the study (i.e. did not provide consent) or (b) approached and interested (i.e. provided consent) but did not complete the questionnaire package. As such, it was not possible to assess whether those who completed the current study may have differed on relevant factors (e.g., demographics, ACEs, emotion dysregulation, interpersonal problems) from those who did not complete the questionnaire package or who chose not to participate in the current study.

Finally, the design of the current study did not allow for the assessment of several potentially relevant factors. For instance, past research has demonstrated that the risk associated with ACEs is heavily influenced by other factors in childhood, such as the social context in which children and families live (e.g., social support, abuse severity, neighborhood violence, poverty) (Taylor, Repetti, & Seeman, 1997). Another porentially relevant factor that may explain the association between ACEs and interpersonal functioning in adulthood is the quality of parental relationships, which may serve as a template by which children model their own relationships. Children who observe their parents engaging in positive interpersonal relationships, for instance, may develop positive social expectations for their own interpersonal interactions. Observation of healthy parental relationships may also provide children with fundamental lessons on reciprocity, in which the child learns to receive care and to respond empathetically to others. These hypothesized associations represent possible areas of future research.

5.3. Conclusions

Close and meaningful ties to others are essential to human wellbeing. Conversely, dysfunctional, conflictual, or inadequate relationships are associated with a range of poor physical and mental health outcomes. The current study provides evidence for the salient associations among a range of ACEs and interpersonal functioning among adults, and highlights the role of emotion dysregulation as a mechanism by which ACEs influence interpersonal functioning in adulthood. Results from the current study emphasize the relevance of programs that target emotion dysregulation and interpersonal difficulties for the prevention and treatment of health concerns among individuals with a history of childhood adversity.

Conflict of interest

The authors declare no conflict of interest.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This research did not involve animal participants.

Acknowledgment

This research was supported by a grant from the Palix Foundation awarded to Dobson and Pusch [RSO number: 1031803, 2015–2016].

References

Ainsworth, M. S. (1979). Infant–mother attachment. *American Psychologist, 34*(10), 932.
Barkham, M., Hardy, G. E., & Startup, M. (1996). The IIP-32: A short version of the inventory of interpersonal problems. *British Journal of Clinical Psychology, 35*(1), 21–35.
Berking, M., Wupperman, P., Reichardt, A., Pejic, T., Dippel, A., & Znoj, H. (2008). Emotion-regulation skills as a treatment target in psychotherapy. *Behaviour Research and Therapy, 46*(11), 1230–1237.
Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., ... Zule, W. (2003). Development and validation of a brief screening version of the childhood trauma questionnaire. *Child Abuse and Neglect, 27*(2), 169–190.
Borkovec, T. D., Newman, M. G., Pincus, A. L., & Lytle, R. (2002). A component analysis of cognitive-behavioral therapy for generalized anxiety disorder and the role of interpersonal problems. *Journal of Consulting and Clinical Psychology, 70*(2), 288.
Bowlby, J. (1969). *Attachment and loss. Attachment, Vol. 1*. New York: Basic Books.
Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748–766.
Burns, E. E., Jackson, J. L., & Harding, H. G. (2010). Child maltreatment, emotion regulation, and posttraumatic stress: The impact of emotional abuse. *Journal of Aggression, Maltreatment & Trauma, 19*(8), 801–819.
Calkins, S. D., & Hill, A. (2007). Caregiver influences on emerging emotion regulation. *Handbook of Emotion Regulation,* 229–248.
Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology, 25*(3), 394.
Cast, A. D., & Burke, P. J. (2002). A theory of self-esteem. *Social Forces, 80*, 1041–1068.
Chao, R. C. L. (2011). Managing stress and maintaining well-being: Social support, problem-focused coping, and avoidant coping. *Journal of Counseling & Development,*

89(3), 338–348.
Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82*(2), 217–225.
Chartier, M. J., Walker, J. R., & Naimark, B. (2010). Separate and cumulative effects of adverse childhood experiences in predicting adult health and health care utilization. *Child Abuse & Neglect, 34*(6), 454–464.
Cloitre, M., Miranda, R., Stovall-McClough, K. C., & Han, H. (2005). Beyond PTSD: Emotion regulation and interpersonal problems as predictors of functional impairment in survivors of childhood abuse. *Behavior Therapy, 36*(2), 119–124.
Cloitre, M., Stolbach, B. C., Herman, J. L., Kolk, B. V. D., Pynoos, R., Wang, J., ... Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress, 22*(5), 399–408.
Cloitre, M., Stovall-McClough, K. C., Nooner, K., Zorbas, P., Cherry, S., Jackson, C. L., ... Petkova, E. (2010). Treatment for PTSD related to childhood abuse: A randomized controlled trial. *American Journal of Psychiatry, 167*(8), 915–924.
Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Erlbaum.
Cole, P. M., Michel, M. K., & Teti, L. O. D. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in Child Development, 59*(2–3), 73–102.
Cook, E. T., Greenberg, M. T., & Kusche, C. A. (1994). The relations between emotional understanding, intellectual functioning, and disruptive behavior problems in elementary school-aged children. *Journal of Abnormal Child Psychology, 22*, 205–219.
Davis, J. L., & Petretic-Jackson, P. A. (2000). The impact of child sexual abuse on adult interpersonal functioning: A review and synthesis of the empirical literature. *Aggression and Violent Behavior, 5*(3), 291–328.
Davis, J. L., Petretic-Jackson, P. A., & Ting, L. (2001). Intimacy dysfunction and trauma symptomatology: Long-term correlates of different types of child abuse. *Journal of Traumatic Stress, 14*(1), 63–79.
De Bellis, M. D., & Thomas, L. A. (2003). Biologic findings of post-traumatic stress disorder and child maltreatment. *Current Psychiatry Reports, 5*(2), 108–117.
Dobson, K. S., Poole, J. C., Pusch, D., Whitsitt, D., McKay, M., & Bhosale, A. (2015). Assessing adverse childhood experiences in primary care settings. *Poster Presented at the Canadian Collaborative Mental Health Care Conference*.
Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse & Neglect, 28*(7), 771–784.
Drapeau, M., & Perry, J. C. (2004). Childhood trauma and adult interpersonal functioning: A study using the core conflictual relationship theme method (CCRT). *Child Abuse & Neglect, 28*(10), 1049–1066.
Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect, 28*(7), 729–737.
Ducharme, J., Koverola, C., & Battle, P. (1997). Intimacy development: The influence of abuse and gender. *Journal of Interpersonal Violence, 12*(4), 590–599.
Edwards, V. J., Anda, R. F., Felitti, V. J., & &Dube, S. R. (2004). Adverse childhood experiences and health-related quality of life as an adult. In K. A. Kendall-Tackett (Ed.). *Health consequences of abuse in the family: A clinical guide for evidence-based practice*. Washington, DC: American Psychological Association.
Eng, W., & Heimberg, R. G. (2006). Interpersonal correlates of generalized anxiety disorder: Self versus other perception. *Journal of Anxiety Disorders, 20*(3), 380–387.
Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy, 41*(5), 509–528.
Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245–258.
Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse & Neglect, 32*(6), 607–619.
Ferguson, K. S., & Dacey, C. M. (1997). Anxiety, depression, and dissociation in women health care providers reporting a history of childhood psychological abuse. *Child Abuse & Neglect, 21*(10), 941–952.
Finch, J. F., Okun, M. A., Pool, G. J., & Ruehlman, L. S. (1999). A comparison of the influence of conflictual and supportive social inter-actions on psychological distress. *Journal of Personality, 67*, 581–621.
Fischer, A. H., & Manstead, A. S. (2008). Social functions of emotion. *Handbook of Emotions, 3*, 456–468.
Finzi-Dottan, R., & Karu, T. (2006). From emotional abuse in childhood to psychopathology in adulthood: A path mediated by immature defense mechanisms and self-esteem. *The Journal of Nervous and Mental Disease, 194*(8), 616–621.
Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*(3), 233–239.
Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41–54.
Gunnar, M., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology, 58*, 145–173.
Gunnar, M. R., & Adam, E. K. (2012). The hypothalamic–pituitary–adrenocortical system and emotion: Current wisdom and future directions. *Monographs of the Society for Research in Child Development, 77*(2), 109–119.
Hartmann, A., Zeeck, A., & Barrett, M. S. (2010). Interpersonal problems in eating disorders. *International Journal of Eating Disorders, 43*(7), 619–627.
Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford Press.
Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry, 5*(1), 1–22.
Heim, C., & Nemeroff, C. B. (2001). The role of childhood trauma in the neurobiology of mood and anxiety disorders: preclinical and clinical studies. *Biological Psychiatry, 49*(12), 1023–1039.
Hopwood, C. J., Clarke, A. N., & Perez, M. (2007). Pathoplasticity of bulimic features and interpersonal problems. *International Journal of Eating Disorders, 40*(7), 652–658.
Hovens, J. G., Wiersma, J. E., Giltay, E. J., Van Oppen, P., Spinhoven, P., Penninx, B. W., ... Zitman, F. G. (2010). Childhood life events and childhood trauma in adult patients with depressive, anxiety and comorbid disorders vs. controls. *Acta Psychiatrica Scandinavica, 122*(1), 66–74.
Hughes, J., & Barkham, M. (2005). Scoping the inventory of interpersonal problems, its derivatives and short forms: 1988–2004. *Clinical Psychology & Psychotherapy, 12*(6), 475–496.
Jewkes, R. K., Dunkle, K., Nduna, M., Jama, P. N., & Puren, A. (2010). Associations between childhood adversity and depression, substance abuse and HIV and HSV2 incident infections in rural South African youth. *Child Abuse & Neglect, 34*(11), 833–841.
Kiecolt-Glaser, J. K., Bane, C., Glaser, R., & Malarkey, W. B. (2003). Love, marriage, and divorce: newlyweds' stress hormones foreshadow relationship changes. *Journal of Consulting and Clinical Psychology, 71*(1), 176.
Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry, 51*(6), 706–716.
Kim-Spoon, J., Cicchetti, D., & Rogosch, F. A. (2013). A longitudinal study of emotion regulation, emotion lability-negativity, and internalizing symptomatology in maltreated and nonmaltreated children. *Child Development, 84*(2), 512–527.
Lakey, B. (2013). Personality and relational processes in perceived support and happiness. In I. Boniwell, & S. David (Eds.). *Oxford hand- book of happiness.*. Oxford, England: Oxford University Press.
Lakey, B., & Cronin, A. (2008). Low social support and major depression: Research, theory and methodological issues. In K. S. Dobson, & D. Dozois (Eds.). *Risk factors for depression* (pp. 385–408). San Diego, CA: Academic Press. http://dx.doi.org/10.1016/B978-0-08-045078-0.00017-4.
Lakey, B., Vander Molen, R. J., Fles, E., & Andrews, J. (2016). Ordinary social interaction and the main effect between perceived support and affect. *Journal of Personality, 84*(5), 671–684.
Lansford, J. E., Dodge, K. A., Pettit, G. S., Bates, J. E., Crozier, J., & Kaplow, J. (2002). A 12-year prospective study of the long-term effects of early child physical

maltreatment on psychological, behavioral, and academic problems in adolescence. *Archives of Pediatrics & Adolescent Medicine, 156*(8), 824–830.
Main, M., Hesse, E., & Goldwyn, R. (2008). Studying differences in language usage in recounting attachment history: An introduction to the AAI. In H. Steele, & M. Steele (Eds.). *Clinical applications of the adult attachment interview* (pp. 31–68). New York, NT: Guilford Press.
Messman-Moore, T. L., & Coates, A. A. (2007). The impact of childhood psychological abuse on adult interpersonal conflict: The role of early maladaptive schemas and patterns of interpersonal behavior. *Journal of Emotional Abuse, 7*(2), 75–92.
Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1996). The long-term impact of the physical, emotional, and sexual abuse of children: A community study. *Child Abuse & Neglect, 20*(1), 7–21.
Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect, 38*(24), 224–233.
Keltner, D., & Haidt, J. (2001). Social functions of emotions. In T. J. Mayne, & G. A. Bonanno (Eds.). *Emotions: Current issues and future directions. Emotions and social behavior* (pp. 192–213). New York: Guilford Press.
Petty, S. C., Sachs-Ericsson, N., & Joiner, T. E. (2004). Interpersonal functioning deficits: Temporary or stable characteristics of depressed individuals? *Journal of Affective Disorders, 81*(2), 115–122.
Poole, J. C., Dobson, K. S., & Pusch, D. (2017a). Childhood adversity and adult depression: The protective role of psychological resilience. *Child Abuse & Neglect, 64*, 89–100.
Poole, J. C., Dobson, K. S., & Pusch, D. (2017b). Anxiety among adults with a history of childhood adversity: Psychological resilience moderates the indirect effect of emotion dysregulation. *Journal of Affective Disorders, 217*, 144–152.
Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin, 128*(2), 330.
Ritschel, L. A., Tone, E. B., Schoemann, A. M., & Lim, N. E. (2015). Psychometric properties of the difficulties in emotion regulation scale across demographic groups. *Psychological Assessment, 27*(3), 944.
Robins, C. J., Schmidt, H., & Linehan, M. M. (2004). Dialectial behaviour therapy: Synthesizing radical accpenace with skillful means. In S. Hayes, V. Follette, & M. Linehan (Eds.). *Mindfulness, acceptance and relationships* (pp. 30–44). New York: Guilford Press.
Rogosch, F. A., Cicchetti, D., & Aber, J. L. (1995). The role of child maltreatment in early deviations in cognitive and affective processing abilities and later peer relationship problems. *Development and Psychopathology, 7*, 591–609.
Rose, D. T., & Abramson, L. Y. (1992). Developmental predictors of depressive cognitive style: Research and theory. In D. Cicchetti, & S. Toth (Vol. Eds.), *Rochester symposium of developmental psychopathology: Vol. IV*, (pp. 323–349). Rochester, NY: University of Rochester Press.
Segrin, C. (2001). *Interpersonal processes in psychological problems.* New York: Guilford Press.
Shahar, G., Joiner, T. E., Zuroff, D. C., & Blatt, S. J. (2004). Personality, interpersonal behavior, and depression: Co-existence of stress-specific moderating and mediating effects. *Personality and Individual Differences, 36*(7), 1583–1596.
Shipman, K., Zeman, J., Penza, S., & Champion, K. (2000). Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Developmental Psychopathology, 12*, 47–62.
Stevens, N. R., Gerhart, J., Goldsmith, R. E., Heath, N. M., Chesney, S. A., & Hobfoll, S. E. (2013). Emotion regulation difficulties, low social support, and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy, 44*(1), 152–161.
Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development, 7*(4), 349–367.
Straus, M. A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. *Journal of Marriage and the Family,* 75–88.
Tarullo, A. R., & Gunnar, M. R. (2006). Child maltreatment and the developing HPA axis. *Hormones and Behavior, 50*(4), 632–639.
Taylor, S. E., Repetti, R. L., & Seeman, T. (1997). Health psychology: what is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology, 48*(1), 411–447.
Van der Kolk, B. A., Roth, S., Pelcovitz, D., & Mandel, F. (1993). *Complex PTSD: Results of the PTSD field trials for DSM-IV.* Washington, DC: American Psychiatric Association.
Varia, R., & Abidin, R. R. (1999). The minimizing style: Perceptions of psychological abuse and quality of past and current relationships. *Child Abuse & Neglect, 23*(11), 1041–1055.
Vittengl, J. R., Clark, L. A., & Jarrett, R. B. (2003). Interpersonal problems, personality pathology, and social adjustment after cognitive therapy for depression. *Psychological Assessment, 15*(1), 29.
Welch, S. L., & Fairburn, C. G. (1996). Childhood sexual and physical abuse as risk factors for the development of bulimia nervosa: A community-based case control study. *Child Abuse & Neglect, 20*(7), 633–642.
Wyatt, G. E. (1985). The sexual abuse of Afro-American and white-American women in childhood. *Child Abuse and Neglect, 9*(4), 507–519.