

Pilot Study of Parental Alienation Items in the Adverse Childhood Events Scale

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Abstract

Background

Adverse Childhood Experiences (ACEs) and Parental Alienation (PA) are forms of adverse events negatively affecting children globally. The current study was to identify a revised ACEs measure that includes a screening item for PA.

Methods

A total of 231 undergraduate students, ages 18 to 37, were surveyed for this analysis. A factor analysis was performed to identify what PA item, out of four, would correlate most strongly with existing ACEs scale items. Convergent and divergent validity was assessed. An exploratory factor analysis was conducted to identify factor structure of scale items and a confirmatory factor analysis of extracted factors was used to assess model fit.

Results

Over half (60%) of the sampled population reported at least one ACEs item. All four PA items were significantly correlated with converging constructs ($r = .68, p < .01$). Out of four PA items, one PA item significantly outperformed the other three items in relation to convergent validity and was used to create a new ACEs-PA scale item ($r = .33, p < .01$). A two factor solution was identified with the new PA item loading, accounting for 35% of the variance, explaining more variance in both outcomes ($R^2 = .43$ and $R^2 = .16$) than the original ACEs scale when comparing the adjusted R^2 values ($R^2 = .35$ and $R^2 = .13$).

Conclusion

Within the population, the new PA item factored significantly with existing ACEs, suggesting the capture of an additional adverse childhood experience.

Introduction

Adverse childhood experiences (ACEs) are traumatic events occurring prior to the age of 18, having lasting negative effects on health and wellbeing.¹⁻⁴ Exposure to ACEs is associated with poor mental health,⁵⁻¹² negative physical health outcomes¹³⁻¹⁷ and engagement in risky behaviors^{6-8,13,18} Accumulation of multiple adversities during childhood has compounding negative effects on these outcomes,^{13,19} and poorer socioeconomic outcomes into adulthood.^{20,21} ACEs are common in the U.S. population,²² with 30–60% of the population experiencing at least one ACE.^{4,23-26}

Experiencing violence, abuse, or neglect are ACEs that have garnered considerable research²⁷⁻³⁴ and witnessing ACEs have short- and long-term negative effects.⁴ Child Affected by Parental Relationship Distress (CAPRD) is recognized as a condition in the DSM-V that refers to children who have been to, or pulled into parental .³⁵ Parental distress can involve consistent disparagement of a parent by the child's other parent, being witness to parental conflicts and intimate partner violence, and pressure to ally with a parent against the other.³⁶ Children affected by this parental relationship distress experience negative psychosomatic, cognitive, affective and psychosocial effects.³⁷

Coercively Controlling Abuse And Parental Alienation

Parental alienation (PA) is an outcome associated with coercively controlling abuse in the family.^{38,39} The use of children by one parent to control and manipulate the other parent is a commonly used abusive strategy⁴⁰⁻⁴² that has negative short- and long-term effects on children.⁴³⁻⁵⁰ Manipulating a child to reject a parent is not easily accomplished, as children who are severely maltreated by a parent often engage in attachment-enhancing rather than destructive behaviors.^{51,52} To weaponize a child against a parent, the coercively controlling parent engages in parental alienating behaviors (PABs) designed to make the child believe their rejected parent never loved them, abandoned them, and/or is unfit or unsafe.⁵³ If the child believes and internalizes these falsehoods, they align with the alienating parent, reject their other parent for reasons that are unjustified, exaggerated, or false, and become "alienated" from the rejected parent.^{54,55}

There are over 50 studies published through 2020 that examined the PABs⁵⁶ including such behaviors as gaslighting, blocking communication, gatekeeping, denigration among others.⁵³ PABs are a form of family violence because they are abusive for both children and the targeted parent.^{37,57}

Parental Alienation As An Adverse Childhood Experience

Alienated children often experience or witness other forms of abuse in their families, such as intimate partner violence,⁵⁸⁻⁶¹ and child physical and sexual abuse by the alienating parent.⁶²⁻⁶⁵ Exposure to PABs is associated with low self-esteem, substance abuse disorders, insecure attachment, anxiety, and depression.⁶⁶⁻⁷² Alienated children are likely to experience internalizing and externalizing problems,⁷³ and adults who experienced PA as children describe experiencing PTSD, attention problems, disassociation, eating disorders and panic attacks.⁷⁴

Despite considerable research on the causes and negative consequences of PA,⁵³ PA has not been scientifically established as an ACE. The current study's purpose is to develop and test potential items for inclusion in the ACEs questionnaire that can be used to screen individuals who have or were alienated from a

parent as a child. The inclusion of such items in the ACEs questionnaire can facilitate greater research on the topic.

The Current Study

It is estimated that about 9% of the US adult population are currently being alienated from their child(ren) by the other parent, and PA affects an estimated 3.5 million children within the US.⁷⁵ An item that effectively screens for PA within the ACEs questionnaire can offer more accurate estimates of the prevalence of PA and would fit well into the existing emotional abuse/neglect or household dysfunction factors.

This study involved a test of four pre-registered research questions (https://osf.io/a3kgc/?view_only=6e75fd3566724b1580c35608883646d3). First, to examine which potential PA-ACEs questions would correlate most strongly with existing validated measures of PA. Second and third, whether the new ACEs item correlates with pre-existing ACE scale items and whether the inclusion of the new proposed item fits into the existing factor structure of the ACEs questionnaire. Fourth, to examine whether the new scale explains more variance in psychological outcomes than the original ACEs scale.

Methods

Participants

Undergraduate students (N= 231) were surveyed for a study on ACEs and the potential buffering role of domestic animals (pets) on outcomes. The current study focused exclusively on the development and testing of a revised ACEs measure that includes a screening item for PA. Participant age ranged from 18 to 37 years old (M = 19.86, SD = 2.64) and 80% were women. Respondents were mainly white (79%) and non-Hispanic (81%).

Procedure

The survey was administered via Qualtrics (Appendix A). The current project's analytic strategy and hypotheses were preregistered on Open Science Framework (https://osf.io/a3kgc/?view_only=6e75fd3566724b1580c35608883646d3).

Measures ACEs Questionnaire

Original ACEs. All 10 original ACEs were assessed (see table 1 for psychometric properties of the ACE module). Each item was constructed as a dummy variable with a score of 0 (never experienced) and 1 (experienced it at any time in their life).

Parental Alienation Items for the ACEs Scale. The third author, and PA subject matter expert, created four items that could potentially be used to screen participants who may be experiencing, or were alienated as a child. Three items were written to capture influence and alignment with a parent against another parent, and one was related to a parent being derogated by the other parent (Appendix B).

Convergent Validity

There are several measures assessing manifestations of PA that are not evident among children who have been abused in other ways.⁵⁶ We used the following two measures for this study:

Baker Child Alienation Questionnaire (BAQ). The Baker Child Alienation Questionnaire (BAQ)⁷⁶ consists of seven items asking respondents to report whether or how often they exhibited each of the eight behavioral characteristics of PA toward each parent, as described by Gardner⁷⁸. Responses for each item were coded as "alienation consistent" (1) if the responses for the mother and father items were at opposite extremes of the scale, and 0 (alienation inconsistent) if the scores on the items were not extreme. This scoring resulted in 14 which were then totaled to make an overall sum score ($\alpha = .73$).

Parental Acceptance-Rejection Questionnaire (PARQ). The short version of the adult PARQ is a 24-item, self-report questionnaire that assesses adults' retrospective remembrances of acceptance or rejection towards each parent in their childhood.⁷⁷ The PARQ measures splitting (i.e., describing one parent as "all good" and the other as "all bad") by quantifying the strong acceptance towards an alienating parent accompanied by the strong rejection of the alienated parent. Each item is scored on a 4-point Likert scale ranging from (4) "almost always true" to (1) "almost never true." The PARQ demonstrates reliability across numerous samples in the US, Australia, and Italy.⁷⁹⁻⁸¹

The PARQ-Gap score assesses the difference between realistic estrangement and PA. The gap score is the difference between the PARQ score for each parent. Bernet et al⁵² found that using a PARQ-Gap score of 90 (PARQ long form) as a cut-off point was 99% accurate when distinguishing alienated from non-alienated children. For the short form, a PARQ-Gap score of 29 or higher reliably distinguishes severely alienated from non-alienated children (RP Rohner PhD, personal communication, June 18, 2020).

Discriminant Validity

Two measures testing discriminant validity of the proposed items were included. Protective factors, such as social support, can buffer the negative effects of ACEs and are associated with positive life outcomes,⁸² and low social support in adulthood is associated with abuse and neglect during childhood.⁸³ We predicted that social support would have a small and negative correlation with the PA items. The relationship between PA and positive co-parenting behaviors has not been studied, and we predicted they would have a negative correlation because PABs are not positive or supportive of the other parent.

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS⁸⁴ is a 12-item self-report scale measuring subjectively assessed social support. Three subscales address different sources of support: Family, friends, and significant other. Items are scored on a 7-point scale ranging from (7) Very strongly

agree to (1) Very strongly disagree. This measure has good reliability, moderate construct validity, and strong factorial validity for all subscales.⁸⁴ The MSPSS is one of the most extensively validated measures worldwide.⁸⁵ The scale had excellent internal consistency ($\alpha = .94$).

Positive Co-Parenting Behavior for Mothers & Fathers (PCPB). Ten items were created assessing positive co-parenting behaviors. These self-report items, scored on a 5-point Likert scale, range from (1) Strongly disagree to (5) Strongly agree. Internal consistency for this scale in this study was excellent ($\alpha = .92$).

Criterion Validity

Brief Symptoms Inventory (BSI). The BSI⁸⁶ is used to identify clinically relevant psychological symptoms in adolescents and adults consisting of 53 items covering nine symptom dimensions and three global indices of distress. Respondents ranked each feeling item by intensity of distress during the past seven days on a 5-point scale ranging from 0 (not at all) to 4 (extremely), and is reliable with an average internal consistency of $\alpha > .70$ and test-retest reliability ranging from .68 to .91.⁸⁷⁻⁹⁰ The BSI has been tested in relation to the ACEs scale in previous research,⁹¹⁻⁹³ and had excellent internal consistency, $\alpha = .98$.

Benevolent Childhood Experiences (BCEs). Ten items were constructed assessing BCEs that may have served as protective factors for children at the time they experienced any traumatic experiences. These items were created by the third author and two colleagues, one a clinical social worker and the other a marriage and family therapist. Items were coded as (0) "no" and (1) "yes". Examples of questions included "When you were growing up, during your first 18 years of life did you have at least one caregiver with whom you felt safe" and "Was there an adult (not a parent/caregiver) who could provide you with support or advice?"

Analytic Plan

Data were examined for missing values, and continuous data were checked for outliers and deviations with none found. Psychometric properties of the ACEs questionnaire and four new PA items were analyzed by assessing content validity (i.e., convergent and discriminant measures), construct validity (i.e., relating the new PA item to the ACEs questionnaire), the factor structure of the ACEs scale with the new PA item, and criterion validity (i.e., relating the new PA item to similar outcomes that are used with the ACEs scale). All analyses used R (R Core Team, 2022) and various packages.

Results

Over half the sample (60%) reported exposure to at least one original ACE item. Commonly endorsed ACEs were living with a household member with mental illness or one who attempted suicide (30%), parental separation or divorce (24%), and emotional abuse (24%).

Research Question #1: Content Validity

Assessing content validity, new PA items were correlated with measures of similar constructs (convergent validity) and dissimilar constructs (discriminant validity) using Pearson's R with `cor()` from the stats package and complete observations only (Table 2). All new PA items were positively correlated with PARQ-Gap and BAQ scores, demonstrating convergent validity, and were negatively correlated with MSPSS and PCPB scores, demonstrating discriminant validity. The PARQ-Gap scores significantly and positively correlated with BAQ sum scores ($r = .60, p < .01$). Results indicate that although the newly created items were positively and significantly related to the PARQ-Gap and BAQ measures, item #2 had the strongest correlation, "Do you have a parent or caregiver that you often feel you want nothing to do with? Or a parent or caregiver who you dislike and would rather not spend any time with, while at the same time prefer to be with your other parent?" ($r = .68, p < .01$ and $r = .33, p < .01$ respectively). This item captures both the child's strong rejection and coinciding alignment with different parents, which is an important differentiating feature of alienated children and is not reflected in the other items written to capture the behaviors of the parents. The second item was the most negatively correlated with the MSPSS ($r = -.38, p < .01$) and the PCPB ($r = -.37, p < .01$) demonstrating discriminant validity from those constructs. We continued our remaining analyses using only item #2 creating the new ACEs-PA item scale (Appendix C).

Research Question #2: Construct Validity

We assessed construct validity by calculating the average inter-item tetrachoric correlations of ACEs with the new ACEs-PA item using `polychoric()` from the psych package. This analysis showed how strongly related to the overall ACEs measure the new item was (Table 3). No items were too weakly or strongly correlated with the new item. The results indicated that besides capturing PA, the new item was related to other items assessing ACEs but was distinct enough to be its own item.

Research Question #3: Factor Structure Fit

Internal consistency was assessed with ordinal alpha.⁹⁴ To explore factor structure, we conducted a parallel analysis to determine the suggested number of factors using a scree plot. We conducted an EFA in a random half of the sample ($N = 115$) based on the number of factors determined from the scree plot and used the extracted factors to conduct a CFA in the other half ($N = 116$).

Exploratory Factor Analysis (EFA). We checked data factorability through the Kaiser-Meyer-Olkin (KMO) statistic. The tetrachoric correlation matrix was entered into analyses for a weighted-least-squares extraction EFA. Using oblique rotation ("oblimin") we assumed the factors would covary, and used the scree test to decide on the maximum number of factors. We adjusted the number of factors until they had at least three items with factor loadings of $\geq .30$. In choosing among solutions, we tried to make sure that factors were conceptually coherent and to minimize the number of items with low communality values ($< .70$) and high loadings on more than one factor. The KMO measure was satisfactory at 0.82 as was Bartlett's test of sphericity, $\chi^2(55) = 614.26, p < .001$. To test scale internal consistency, we calculated the ordinal alpha based on the polychoric correlation matrix resulting in excellent internal consistency (11 items, $\alpha = .92$). The scree plot suggested three or fewer factors. (Figure 1).

Analyses with three and two factors indicated that a two-factor solution yielded the most parsimonious fit. Factor 1 consists of three items describing violent behavior, emotional abuse, and neglect and was labeled Abuse/Neglect. Factor 2, labeled Household Dysfunction, consisted of seven items assessing disturbances in the childhood home environment such as family member substance use, parental separation or divorce, and parental incarceration. Item 3 was dropped from our final analysis as it was the only item to load onto its own factor (sexual abuse). The new PA item loaded most strongly onto the household dysfunction factor. The two factors collectively accounted for 35% of the variance in the remaining data (Table 4).

Confirmatory Factor Analysis. We used the extracted factors to conduct a confirmatory factor analysis (CFA) on raw ACEs data using the lavaan package. The weighted least square means and variance estimator was used to conduct the analysis of binary endogenous measures. Model fit was assessed on three goodness-of-fit indicators appropriate for binary indicators: The comparative fit index (CFI), the robust value of the root mean square error of approximation (RMSEA), and the robust value of the chi-square. A CFI of over .90 and an RMSEA of less than .08 were considered acceptable for model fit.²⁹ Model fit was further examined through factor loadings of the indicators onto the latent variables. To validate these results, we conducted a CFA. The determination of model fit was based on a comparison of the fit indices obtained from CFA with the suggested cutoff values for the CFI, TLI, RMSEA, and SRMR indices.⁹⁵⁻⁹⁷ The model results are presented in Figure 2. The two-factor model demonstrated adequate fit $\chi^2(34) = 72.24, p < .0001, CFI \text{ and } TLI < .90, RMSEA = .099, \text{ and } SRMR > .05.$

Research Question 4: Criterion Validity and Greater Explanation of Variance

We tested to what extent the new ACEs-PA scale was related to the BSI and the BCE using multiple regression. We compared the adjusted R^2 values to determine if the ACEs-PA scale explained more of the variance than the original scale (see Tables 1 – 4).

The ACEs-PA scale explained more variance in both outcomes than the original ACEs scale when comparing the adjusted R^2 values ($R^2 = .43$ and $R^2 = .16$ and $R^2 = .35$ and $R^2 = .13$ respectively). These results suggest that the ACEs-PA scale shows promise at explaining more of the negative outcomes associated with ACEs than the original measure, as well as connect PA to these previously studied relationships.

Discussion

The ACE questionnaire was developed in response to the growing need to assess and further understand the prevalence and impact of child abuse and household environmental factors on public health outcomes. PA is an outcome of an unacknowledged form of family violence³⁷ that is garnering considerable research support over the last few decades.⁵⁶ The purpose of the current study was to examine whether a new item that can screen for PA could enhance the existing ACEs measure to aid in research and prevention services.

Our first research question tested which of the four items created to screen for PA would have the highest association with two validated measures of PA. The item with the strongest correlation captured both the rejection of an alienated parent and the alignment with the preferred parent. This item was negatively associated with the perceived social support and positive co-parenting behaviors measures, demonstrating discriminant validity. We examined the content validity of the new ACE-PA item after being added to the original scale. The new item correlated significantly with the other existing items, but not enough to indicate that it was too similar. The ACE-PA item was a related but distinct item in the new measure.

We assessed whether and how the new ACE-PA item fit into the factor structure of the original ACE scale. An EFA and CFA found support for a two-factor structure, with the new ACE-PA item fitting into the household dysfunction subscale. This is not surprising, as PA is a product of an abusive family dynamic.^{39,60}

Including the ACE-PA item in the new ACEs measure explained more of the variance in outcomes commonly measured in ACEs research: The BSI and the BCE.⁸⁶ The BSI is used widely to assess psychological distress and psychiatric symptoms. Past research demonstrates that ACEs and PABs are associated with increased risk of negative mental health outcomes such as PTSD and depression.^{9,18,51,66-68,70-72,98-100} Including a new item to screen for this particular outcome can capture more variance in childhood adversity outcomes. Given the new ACE-PA item loaded on the family dysfunction subscale, the inclusion of the item improved the explanation of BCE variance, as alienated children often experience tremendous loss of autonomy, identity, and support during childhood.¹⁰¹

Limitations

We relied exclusively on self-report data which can be influenced by emotional reactions to the sensitive nature of ACE survey items, retrospective bias, and/or coping developed in response to trauma. We sampled young adults in a university indicating our findings may limit some generalizability, yet as respondents are recently out of their caregivers' homes, their retrospection is potentially more honest and/or accurate than older adults who might be further removed from these experiences. However, many university students are alienated children, and this scale would benefit this population. Replication studies can test whether other items indicative of PA would perform psychometrically better than the item we created for this study, and whether the addition of such items would change the factor structure of the scale.

There are questions regarding conceptual issues with the ACEs scale, such as how the ACEs assigns individuals into binary categories regarding adversities (experienced vs not experienced). While this approach is useful from a screening perspective, there is potential for false positives and it fails to capture the severity or spectrum of experiences. Future research should include measurement of perceived severity as well as timing and duration of experience.

Conclusions

The ACE module has been used with the BRFSS (Behavioral Risk Factor Surveillance System),¹³⁵ used by the Center for Disease Control and Prevention. If an item indicating exposure to PA were to include an ACE module like the BRFSS, we could better estimate the prevalence of PA, measure it in a population, and assess its relationship with additional mental and physical health outcomes on a scale that PA research has yet to attain. The results of our study indicate that inclusion of the newly created item can effectively explain more variance in negative outcomes for individuals who experienced childhood adversity. Finding that a new item measuring PA fits well into the existing factor structure of the ACEs scale as household dysfunction indicates its usefulness in capturing another adverse experience. PA has yet to be studied in the ACEs context, making this a novel investigation of a family dynamic that affects millions of children.

Abbreviations

ACEs	Adverse Childhood Experiences
CAPRD	Child Affected by Parental Relationship Distress
PA	Parental Alienation
PABs	Parental Alienating Behaviors
BAQ	Baker Child Alienation Questionnaire
PARG	Parental Acceptance-Rejection Questionnaire
MSPSS	Multidimensional Scale of Perceived Social Support
PCPB	Positive Co-Parenting Behavior for Mothers & Fathers
BSI	Brief Symptoms Inventory
BCEs	Benevolent Childhood Experiences
EFA	Exploratory Factor Analysis
KMO	Kaiser–Meyer–Olkin
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
RMSEA	Root Mean Square Error of Approximation
BRFSS	Behavioral Risk Factor Surveillance System

Declarations

Ethics approval and consent to participate. The Colorado State University's Institutional Review Board approved this study (ref: #2142). Participants were informed that participation was voluntary and anonymous and informed consent was required before proceeding. Students were given research participation credit upon completion.

Consent for publication Not applicable

Availability of data and materials The datasets generated and/or analyzed during the current study are available on Open Science Framework, https://osf.io/a3kgc/?view_only=6e75fd3566724b1580c35608883646d3

Competing interests The authors declare that they have no competing interests

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Authors contributions All the authors (JM, LS, JH) contributed to the design of the study, and the writing and revisions of the manuscript. Author JH collected the original data. Author LS conducted the statistical analyses in the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1. ACE-PA Regression Results Using Benevolent Childhood Experiences as the Criterion

Predictor	<i>b</i>	<i>b</i> 95% CI [LL, UL]	<i>beta</i>	<i>beta</i> 95% CI [LL, UL]	<i>sr</i> ²	<i>sr</i> ² 95% CI [LL, UL]	<i>r</i>	Fit
(Intercept)	9.80**	[9.59, 10.01]						
ACE_PA_Sum	-0.37**	[-0.43, -0.32]	-0.65	[-0.75, -0.55]	.42	[.33, .50]		-.65**
								<i>R</i> ² = .425**
								95% CI[.33,.50]
<i>ACE- PA Regression results using Brief Symptoms Inventory as the criterion</i>								
(Intercept)	34.91**	[28.43, 41.39]						
ACE_PA_Sum	5.92**	[4.12, 7.73]	0.40	[0.28, 0.52]	.16	[.08, .25]		.40**
								<i>R</i> ² = .160**
								95% CI[.08,.25]
<i>ACE Regression results using Benevolent Childhood Experiences as the criterion</i>								
(Intercept)	9.68**	[9.46, 9.89]						
ACE_Sum	-0.49**	[-0.57, -0.40]	-0.60	[-0.70, -0.49]	.36	[.26, .44]		-.60**
								<i>R</i> ² = .355**
								95% CI[.26,.44]
<i>ACE Regression results using Brief Symptoms Inventory as the criterion</i>								
(Intercept)	37.08**	[30.69, 43.47]						
ACE_Sum	7.81**	[5.18, 10.44]	0.37	[0.24, 0.49]	.13	[.06, .22]		.37**
								<i>R</i> ² = .134**
								95% CI[.06,.22]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. *sr*² represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

* indicates *p* < .05. ** indicates *p* < .01

Table 2. Means, Standard Deviations, and Correlations with Confidence Intervals

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. PARQ_GAP	8.74	10.50							
2. BAQ_Sum	0.45	1.05	.60**						
			[.51, .68]						
3. PCPB_Sum	35.39	8.10	-.45**	-.27**					
			[-.56, -.34]	[-.39, -.14]					
4. MSPSS_Sum	71.14	12.63	-.22**	.02	.37**				
			[-.35, -.09]	[-.11, .15]	[.25, .49]				
5. ACE_NEW_1	0.04	0.20	.22**	.31**	-.24**	-.05			
			[.09, .35]	[.19, .43]	[-.36, -.11]	[-.18, .08]			
6. ACE_NEW_2	0.21	0.40	.68**	.33**	-.48**	-.38**	.21**		
			[.60, .75]	[.21, .45]	[-.57, -.36]	[-.48, -.26]	[.08, .33]		
7. ACE_NEW_3	0.25	0.43	.36**	.21**	-.35**	-.22**	.17**	.41**	
			[.23, .47]	[.08, .33]	[-.46, -.22]	[-.34, -.09]	[.04, .30]	[.29, .51]	
8. ACE_NEW_4	0.12	0.33	.32**	.26**	-.41**	-.18**	.18**	.34**	.34**
			[.19, .43]	[.13, .37]	[-.51, -.29]	[-.31, -.05]	[.05, .30]	[.22, .45]	[.22, .45]

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.

Table 3. Correlations

	1	2	3	4	5	6	7	8	9	10	11
ACE_1	—										
ACE_2	0.85	—									
ACE_3	0.37	0.40	—								
ACE_4	0.78	0.78	0.21	—							
ACE_5	0.75	0.52	0.18	0.75	—						
ACE_6	0.49	0.33	0.24	0.31	0.73	—					
ACE_PA	0.74	0.47	0.32	0.71	0.80	0.54	—				
ACE_7	0.65	0.58	0.45	0.50	0.67	0.62	0.51	—			
ACE_8	0.42	0.21	0.15	0.45	0.52	0.53	0.48	0.52	—		
ACE_9	0.49	0.35	0.27	0.52	0.67	0.40	0.53	0.89	0.57	—	
ACE_10	0.36	0.36	0.26	0.38	0.30	0.50	0.26	0.61	0.65	0.46	—

Table 4. Two-factor Loading with New PA Item

Oblimin Rotated Factor Loadings and Factor Inter-Correlations From the EFA of the ACE Data		
Item	Abuse/neglect	Household dysfunction
1	0.915	0.03
2	0.687	-0.07
4	0.636	0.01
5	0.10	0.423
6	-0.04	0.591
New ACE-PA Item	0.247	0.352
7	0.224	0.473
8	-0.127	0.629
9	0.129	0.434
10	0.02	0.434

Appendix A

Appendix A is not available with this version

Figures

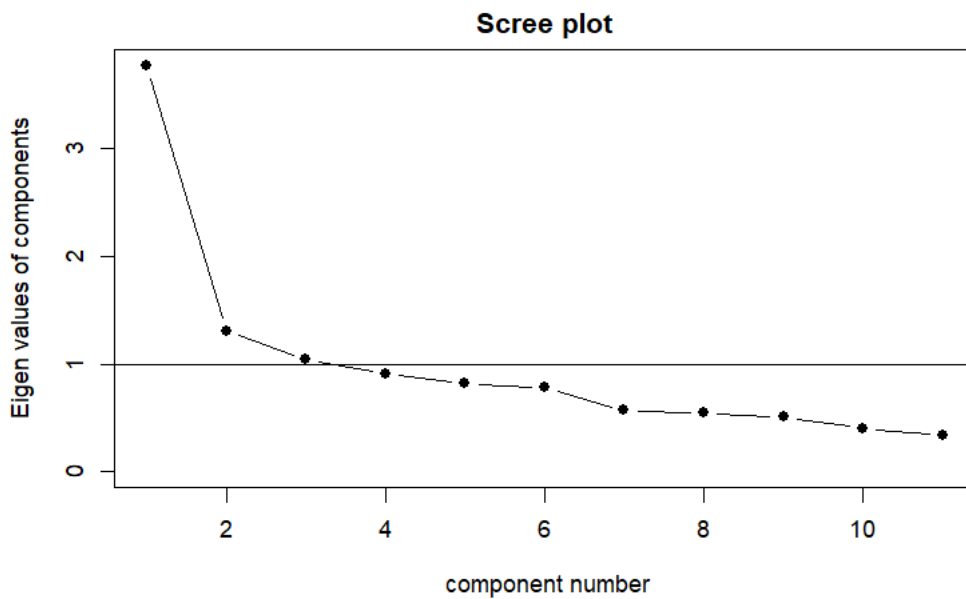


Figure 1

Scree Plot for Number of Factors by Eigenvalue

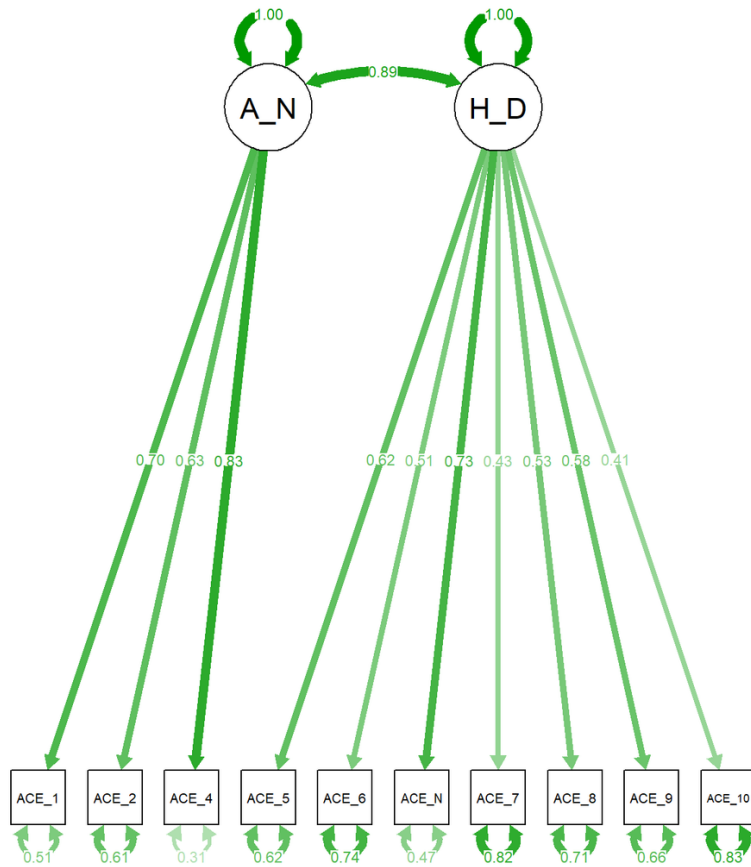


Figure 2

Exploratory Factor Analysis Model with Two Factors

A_N = Abuse/Neglect subscale, H_D = Household Dysfunction subscale

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [AppendixABandc.docx](#)