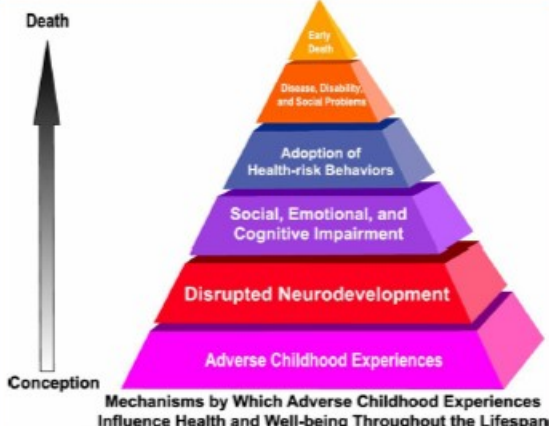


# ACEs and PACEs: The Development of the Protective and Compensatory Experiences Survey

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## BACKGROUND

- Large epidemiological studies have established a predictive relationship between Adverse Childhood Experiences (ACEs) and subsequent adult health and behavior (Felitti, Anda, et al., 1998).
- The ACEs model posits that childhood stress resulting from abuse, neglect and family dysfunction is biologically embedded in the immune, metabolic systems, and neurologic systems (Miller, Chen & Parker, 2011), resulting in impairments in emotion regulation and attachment (Danese & McEwen, 2012).
- We argue that research on the effects of ACEs should also include environmental conditions and relationships that mitigate the neurological impairments associated with ACEs.
- From the developmental literature we identified 10 Protective and Compensatory Experiences (PACEs) and have developed a questionnaire to assess PACEs (see Box in central column).
- The PACEs survey includes items that assess availability and strength of relationships as well as elements that promote feelings of safety and security (order, predictability, mastery).
- In parallel to the ACEs survey, the PACEs has ten "yes" or "no" items, one for each PACE identified in the literature.

## Protective & Compensatory Experiences (PACEs)

Connectedness/Belonging	Structure/Predictability
Had someone who loved you unconditionally	Had an engaging hobby (artistic, intellectual pastime)
Had at least one best friend	Went to a school with the resources & activities necessary for learning
Regularly did something to help others along or with others	Lived in a home with enough food and was typically clean & safe
Had a trustworthy adult (not a parent) to turn to for help or advice	Was involved in an organized sports group or other physical activity
Was active in at least one civic or non-sport social group	Lived in a home where rules were clear and fairly administered

## SAMPLES

### 109 Parents (38 male)

- 42% ethnic minority
- 34% single parents
- Education - 30% high school graduate or less
- Median income - \$25,000 - \$40,000
- 25% of the sample earning less than \$25,000 a year
- Num. children (1-7, mean = 2.33)
- Parent age (25-50, mean = 38.06)

### 900 M-Turk sample (252 male)

- 20% ethnic minority; all 50 states
- 49% single
- 13% High school degree or less; 30% some college; 32% Bachelors
- Median income - \$20,000 - \$29,000
- 30% of the sample earning less than \$30,000 a year
- 43% child under the age of 5
- Age (18-77, mean = 34.68)

## RESULTS

### Reliability

- $\alpha = .76$  Parent Sample
  - Reliability scores were examined by subgroup:
    - different ethnic groups ( $\alpha$ 's ranged from .70 to .81)
    - levels of education ( $\alpha$ 's ranged from .62 to .78).
- $\alpha = .71$  M-Turk sample

### Validity

PACE scores were significantly correlated with:

### Parenting Sample

- ACEs ( $r = -.40, p < .001$ )
  - empathy ( $r = .29, p < .01$ )
  - role reversal ( $r = -.18, p < .06$ )
  - autonomy ( $r = .33, p < .01$ )
  - education level ( $r = .33, p < .001$ ) and income ( $r = .32, p < .01$ )
- ### M-Turk Sample
- ACEs ( $r = -.48, p < .001$ )
  - secure adult attach ( $r = .27, p < .001$ )
  - insecure adult attach ( $r = -.27, p < .001$ )
  - depressive symptoms ( $r = -.29, p < .01$ )
  - education level ( $r = .17, p < .001$ ) and income ( $r = .11, p < .01$ ).

Table 1: The buffering effect of PACEs on harsh parenting for ACEs.

Variable	Low PACEs			High PACEs		
	B	SE B	$\beta$	B	SE B	$\beta$
Education	-0.13	0.09	-.19	0.03	0.15	.02
Gender	-0.37	0.27	-.19	-0.32	0.25	-.17
ACEs	0.12	0.05	.42**	0.04	0.07	-.09
$R^2$	.23			.03		
F	4.26*			0.59		

Note: \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .



## CONCLUSIONS

- Our preliminary findings indicate that the PACEs is internally consistent within diverse samples.
- PACE scores are associated with fewer ACEs, higher education and income levels, and with better parenting attitudes (less role reversal, more empathy and autonomy), less depressive symptoms and more secure adult attachment.
- Higher PACE scores also determined whether parents with higher ACE scores endorsed negative parenting attitudes.
- As research and interventions continue to focus on the negative effects of toxic stress in childhood (Shonkoff, et al. 2011), we propose that the protective and compensatory effects of early relationships and supportive environments also be assessed.

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