



ADVANCING HEALTH EDUCATION &amp; RESEARCH



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# AVA Research Review

## ADVANCING HEALTH EDUCATION & RESEARCH

### Review Title:

Intergenerational Effects of Adverse Childhood Experiences

### Reviewer(s):

Thomas F Boat, MD  
Professor, Department of Pediatrics  
Cincinnati Children's Hospital Medical Center and the University of Cincinnati

**Article:** Folger, A.T., Eismann, A., Stephenson, N.B., Shapiro, R.A., Macaluso, M., Brownrigg, M.E., Gillespie, F.J. (2018) Parental Adverse Childhood Experiences and Offspring Development at 2 years of Age. *Pediatrics*, 2018, 141 (April): <http://pediatrics.aappublications.org/content/141/4/e20172826>

### Introduction:

Adverse childhood experiences (ACE) are well documented contributors to unhealthy behavioral and physical outcomes that are apparent as early as the first years of life and notable across the lifespan

(Felitti, V.J., Anda, R.F., Nordenberg, D. 1996; Bethel, C.D., Newacheck, P., Hawes, D., Halfon, N. 2014). Documentation of ACE in the preconception, prenatal, and postnatal periods could provide the basis for designing interventions that foster improved parenting and child development. While a relationship between parental ACE and child outcomes is now well documented, mediating factors have not been clearly defined, and interventions to disrupt the intergenerational effects of ACE have consequently taken the form of general efforts to improve parenting skills (Briggs, R.D., Silver, E.J., Krug, L.M. 2014). Furthermore, the interaction of early adverse and protective factors as determinants of parenting skills has not been productively explored. The paper by Folger et al adds important pieces of information to the

consideration of parental ACE and early life protective factors, their identification in primary health care practice, and their role in offspring social, behavioral and physical development.

### **Aims/Hypotheses:**

The authors designed this retrospective analysis of data on parental ACE and global child development at 24 months of age, accumulated in a suburban primary care practice with a diverse patient population, over nearly two years. The aim was to test the hypotheses that recalled parental ACE had a negative effect on offspring development at 24 months of age, that the effects of parental ACE on child development are mediated in part by maternal depression, and that effects of parental ACE on the child can be attenuated by parental early life protective factors. They further explored the question of whether paternal as well as maternal ACE has deleterious effects on child development.

### **Relevant Findings:**

1) Both maternal and paternal ACE were adversely associated with child developmental outcomes in the domains of motor, communication and problem-solving skills at 24 months of age.

2) The presence of one parental ACE increased child need for early intervention services. For each additional parental ACE there was an 18% increase in risk for suspected developmental delay. 3) Paternal ACE had an effect on the child approximately equal to that of maternal ACE. 4) A trend was noted for worse child developmental outcomes if the maternal early resilience score was low. 5) Depressive symptoms for mothers at the child age of two months were significantly associated with ACE, but the authors were unable to document a relationship between maternal depressive symptoms and child developmental outcomes.

### **Strengths and Limitations of this Study:**

The study was retrospective but data were gathered in an intentional mode, using reliable and validated tools for child development and ACE/Resilience recall and maternal depression information gathered in a large suburban, two-site pediatric practice. Patients were both Caucasian and non-Caucasian (predominantly Hispanic), and were insured through public and private mechanisms. The study data were collected from visits occurring between October 2012 and June 2014.

Features of the study that added new information to the literature include query of fathers concerning ACE, query of both mothers and fathers concerning early life protective factors (resilience), and screening of mothers for depression, all within the first several months of the child's life.

Potential weaknesses of the study include limited enrollment of all families within the practice (543/1822) seen during the study period, or failure to report how those families who were evaluated for parental ACE were identified. How many families refused to participate? Further, approximately one third of families who were assessed for parental ACE, left the practice before the 24 month developmental assessment of their child. It is unclear how representative the study population was of the entire practice population. Data on paternal ACE were relatively limited (122 fathers vs 311 mothers) precluding some analyses such as relationship between paternal ACE and developmental subset outcomes. Yet another complexity of this study was the inclusion of 100 children, both of whose parents filled out the ACE survey.

Data from these two parent-child dyads were separately analyzed, even though there was a single child development outcome.

### **Reviewer's Comments:**

Even considering the retrospective format of the study and the weaknesses articulated above, the large study numbers, and the new data generated about the global development of the child, the effect of paternal ACE, and the impact of early life protective factors for both parents for inclusion in the analyses, elevate this paper to a level of substantial contribution to the field. The large number of study families completing the parent and child assessments, and the concurrence of the parental ACE dose and child development outcomes with data reported in other studies, provides some assurance that reported results are representative of similar family populations.

The inclusion of paternal ACE and early life parental protective factors data is an important contribution of this study. Clearly, child outcomes are determined by more than maternal ACE. Understanding interactions of contributing factors is a future challenge. Too often associations are seen as cause and effect relationships. For this reason, determining mediating factors is critical for designing the most specific and effective interventions.

Folger et al are to be commended for looking at the contribution of maternal depression in the postpartum period in an attempt to recognize one such factor. Even though unsuccessful in this study, their foray into the world of mediating factors can be a stimulus for others to join in this important search.

It is apparent from the results of this and other studies that we have a long way to go to understand how best one might design and implement universal family screening for determinants of social-emotional development, as well as ability to helpfully respond to the results of this screening, in primary health care settings.

### **References:**

- Bethel, C.D., Newachek, P., Hawes, D., Halfon, N. (2014) Adverse childhood experiences: assessing the impact on health and school engagement and the mitigating role of resilience. *Health Affairs* (Millwood) 33:2106-2115.
- Briggs, R.D., Silver, E.J., Krug, L.M., et al. (2014) Healthy Steps as a moderator: The impact of maternal trauma on child social-emotional development. *Clinical Practice in Clinical Psychology* 2:166-175.
- Felitti, V.J., Anda, R.F., Nordenberg, D. et al. (1996) Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults, 1996, *American Journal of Preventative Medicine* 14:245-258.