The Healthy Steps Program: Developmental Trajectory of Underserved, High-Risk Infants in an Integrated Pediatric Primary Care Setting

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Introduction

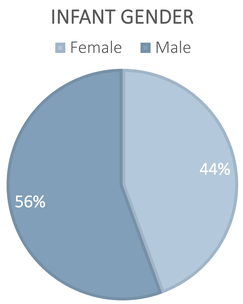
- Individuals who experience adversity in childhood often encounter lifelong difficulties that impact their physical and psychological wellbeing (Kalmakis & Chandler, 2015; Racine, Plamondon, Madigan, McDonald, & Tough, 2017).
- Recent literature suggests that children of caregivers with a history of adverse childhood experiences (ACEs) are also at risk for negative outcomes (Le-Scherban, Wang, Boyle-Steed, & Pachter, 2018).
- Heathy Steps (HS) is an early intervention program within pediatric primary care that seeks to prevent the intergenerational cycle of ACEs and promote overall health of infants and young children by integrating a developmental specialist into the care team to provide additional support to high-risk families of newborns from birth to three years of age (ZERO TO THREE, 2017).
- The literature supports positive outcomes for families who participate in HS; however, extant research has examined the relationship between caregiver ACEs and developmental milestones and outcomes.
- The present study sought to explore the relationship between maternal ACEs and infant development in the first 6 months of life among high-risk families participating in HS at a pediatric primary care practice in rural Oregon.
  - We predicted that a higher number of maternal ACEs would be associated with poorer infant developmental outcomes at 2 months of age and that infant developmental outcomes would improve across the first 6 months of life as families participated in HS.

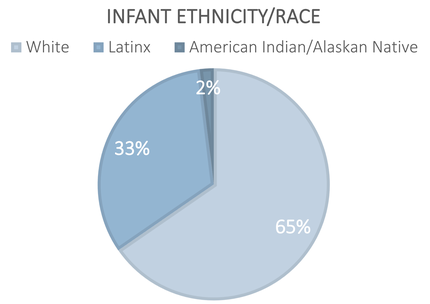
AIM: To explore the relationship between caregiver ACEs and infant development.

Method

Participants

- 95 mothers and their infants identified as high-risk by their pediatrician due to family factors or medical complexity were invited to participate in HS at a pediatric primary care facility in rural Oregon. Caregivers completed measures as part of routine care during well-child visits. Based on the available data, caregiver responses from 45 participants were included in this study.





Measures

- Caregivers completed an ACE questionnaire at the 1-month well-child visit, which yielded a total ACE score.
- The Survey of Well-Being of Young Children (SWYC) was administered to caregivers at the 2-, 4-, and 6-month well-child visits. Of interest in the current study was the 10-item developmental milestone checklist in which higher scores indicate better developmental progress .

Procedure

- Families identified as high-risk for adverse experiences and complex health needs were invited to participate in the HS program.
- Participants received extra support from a HS early childhood "specialist" during well-child visits beginning when the child was 2 weeks old, with the opportunity to continue with the HS program up to 3 years old.
- De-identified child and caregiver sociodemographic characteristics, caregiver ACE score, and developmental scores measured by the SWYC were provided by the pediatric primary care clinic to the researchers.

Results

- Mothers reported an average of 3 ACEs
  - (M = 3.13, SD = 3.17; range = 0-10)
- Results did not support our hypotheses.
  - There was not a significant relationship between caregiver ACEs and infant developmental outcomes at 2 months of age (r = .18, p = .43).
  - Infant developmental outcomes did not significantly improve across timepoints.

Table 1. RM-ANOVA in developmental milestones

Measure/Effect	Time	Sig.
SWYC-2	SWYC-4	0.43
	SWYC-6	0.43
SWYC-4	SWYC-4	0.43
	SWYC-6	0.12
SWYC-6	SWYC-2	0.43
	SWYC-4	0.12

Discussion

- Results were inconsistent with previous research finding that caregiver ACEs have a negative impact on child development (Folger et al., 2018).
- The small sample size and restricted range of ACE scores (i.e., most mothers reported few to none ACEs) may have limited our ability to detect significance. We also examined infants' developmental trajectory within a relatively short time frame of 6 months, and we cannot say with certainty whether or not HS bolsters development as infants near toddlerhood and beyond.
- Future research efforts should explore infant development across a longer developmental timespan and among a larger sample with a broader range of ACE scores.