




# Assessing Family Health in Public Health and Primary Care Settings with the Family Health Scale

- Ali Crandall, PhD, MPH, Associate Professor, Department of Public Health, Brigham Young University.
  - Nomi S. Weiss-Laxer, PhD, MPH, MA, Research Assistant Professor, Departments of Family Medicine and Orthopedics, University at Buffalo, SUNY
  - Jerica M. Berge, PhD, MPH, LMFT, CFLE, Professor and Vice Chair for Research, Department of Family Medicine and Community Health, University of Minnesota Medical School, Minneapolis, MN
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# Learning Objectives



At the conclusion of this session, the participant will be able to:

1. **Describe** the importance of assessing family health in public health/primary care settings
  1. **Demonstrate** the development, validation and screening potential of the Family Health Scale
  1. **Discuss** current and future applications of the Family Health Scale
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# Families are Critical to Health



# Research and Practice Gaps

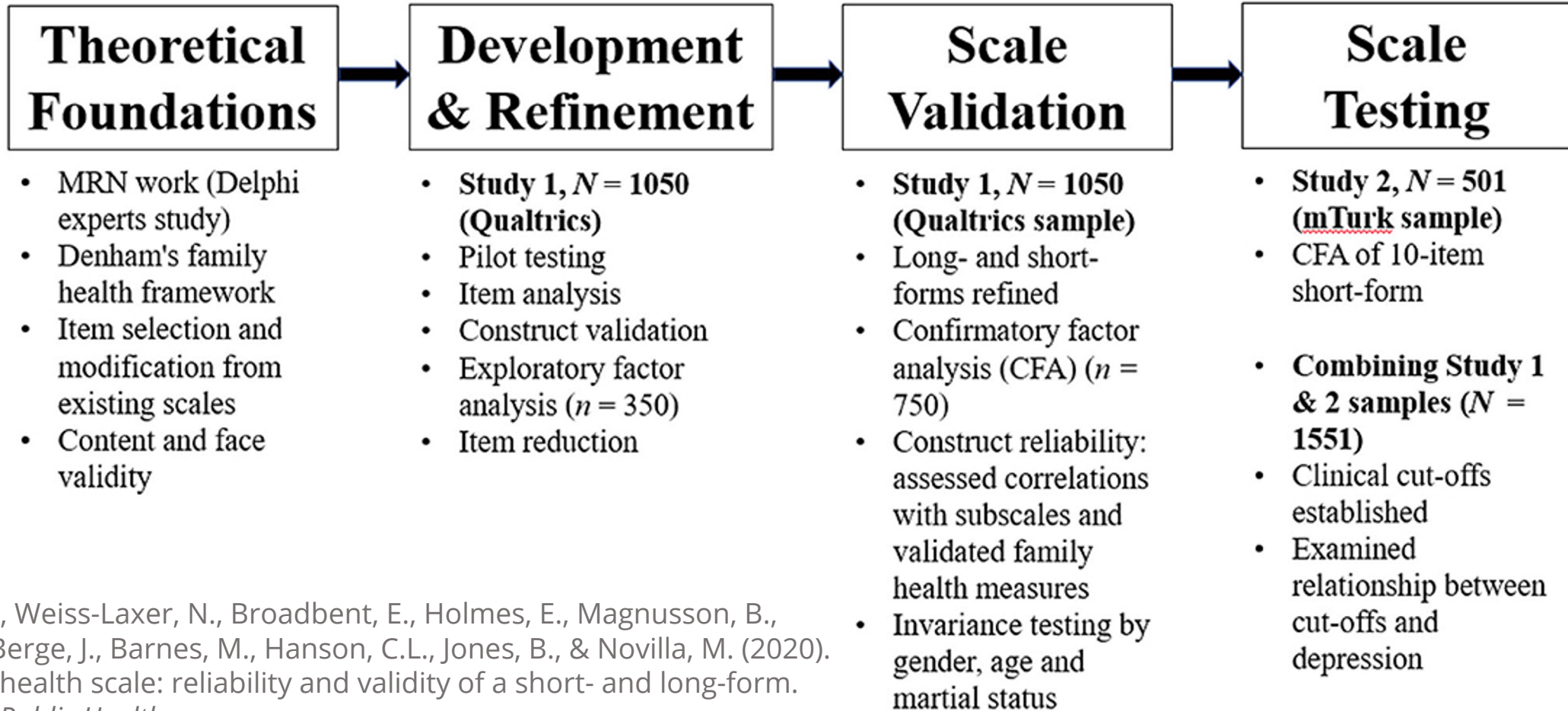


# What is Family Health?

“A resource at the level of the family unit that develops from the intersection of the health of each family member, their interactions and capacities, as well as the family’s physical, social, emotional, economic, and medical resources” (Weiss-Laxer et al., 2020).

Weiss-Laxer, N. S., Crandall, A., Okano, L., & Riley, A. W. (2020). Building a Foundation for Family Health Measurement in National Surveys: A Modified Delphi Expert Process. *Maternal and Child Health Journal*, 1-8.

# Scale Development, Validation and Testing



Crandall, A., Weiss-Laxer, N., Broadbent, E., Holmes, E., Magnusson, B., Okano, L., Berge, J., Barnes, M., Hanson, C.L., Jones, B., & Novilla, M. (2020). The Family health scale: reliability and validity of a short- and long-form. *Frontiers in Public Health*.

# Family Health Scale, Long Form (FHS-LF)

- 32 items
- Four dimensions:
  1. Family social and emotional health processes
  2. Family healthy lifestyle
  3. Family health resources
  4. Family external social supports.

\* Each item assessed on a 5-point Likert (strongly agree to strongly disagree scale)

Crandall, A., et al.. (2020)

# Family Health Scale, Short Form (FHS-SF) – 10 items

## In my family...

1. We support each other.
2. I feel safe in my family relationships.
3. We help each other in seeking health care services when needed (such as making doctor's appointments).
4. We help each other make healthy changes.
5. We stay hopeful even in difficult times.
6. We do not trust doctors and other health professionals
7. We have people outside of our family we can turn to when we have problems at school or work.
8. If we needed financial help, we have people outside of our family we could turn to for a loan

## In the past 12 months...

9. My family did not have enough money at the end of the month after bills were paid.
10. My family did not have adequate housing.

Crandall, A., et al.. (2020)



# Study to Examine FHS Psychometric Properties

- 1050 adults living in the U.S.
- Recruited via a Qualtrics panel
- Quota sampling to match demographics in the U.S.
  - variety of family structures, SES strata, and racial/ethnic groups
- Each participant completed a survey with FHS items and other similar scales to examine construct validity
- EFA to identify dimensions of the scale; CFA to confirm EFA results
- Used another sample through Amazon MTurk ( $N = 501$ ) to test the short-form version of the scale and establish clinical cutoffs

Crandall, A., et al.. (2020)

# Reliability and Validity

- Internal consistency reliability:
  - All Cronbach's alphas  $>.80$ ; good model fit in confirmatory factor analyses
- Construct validity
  - Strong correlations with validated scales

**TABLE 5** | Correlation of the FAD and family health climate score with the FHS-LF. Model fit: RMSEA = 0.056; CFI = 0.951.

	FAD	Family health climate score	Factor 1: family social/emotional health processes	Factor 2: family healthy lifestyle	Factor 3: family health resources	Factor 4: family external social supports
FAD	1.00					
Family health climate score	0.45	1.00				
Factor 1: family social/emotional health processes	0.86	0.48	1.00			
Factor 2: family healthy lifestyle	0.65	0.78	0.77	1.00		
Factor 3: family health resources	0.61	0.29	0.52	0.45	1.00	
Factor 4: family external social supports	0.46	0.39	0.47	0.49	0.41	1.00

$p < 0.001$  for all correlations. FAD, Family Assessment Device.

Crandall, A., et al.. (2020).

# Establishing Clinical Cut-Offs

## Family Health:

- Family Health Scale-SF
- Binary variable for each item
- Summed items [range: 0-10]

## Cut-offs

- <6 = poor
- 6-8 = moderate
- 9-10 = excellent

## Depression:

- Patient Health Questionnaire, 9-item (Kroenke, 2001)
- Summed items [range: 0-36]

## Cut-offs

- < 10 = low or no depression
- 10+ = moderate to high

# Family Health Protective Against Depression

**TABLE 7** | Odds ratios for moderate-to-severe depression based on level of family health.

	<b>Odds ratio (95% confidence interval)</b>
Poor family health	[Reference]
Moderate family health	0.28 (0.21–0.38)
Excellent family health	0.07 (0.05–0.10)
Sampling control	
Study 1 qualtrics sample	[Reference]
Study 2 mTurk sample	0.59 (0.45–0.78)



# Family Health Scale Applications



# Correlates of Family Health

Table 3. Structural Equation Model Results of the Association between Individual Health and Family Health,  $N = 1,045$ .

	Family Social and Emotional Health Processes	Family Healthy Lifestyle	Family Health Resources	Family External Social Supports
Depression	-0.352***	-0.205***	-0.540***	-0.319***
Executive Functioning	0.103*	0.160**	0.054	-0.050
Income	0.091*	0.107**	0.191***	0.159***
Bachelor's Degree	0.015	0.060	-0.029	0.024
Subjective SES	0.058	0.149***	0.026	0.105**
Days of Vigorous Physical Activity	0.048	0.154***	-0.015	0.050
<b>Controls</b>				
Married	0.106**	0.082*	-0.043	0.002
Age	-0.088*	-0.104**	0.053	-0.292***
Number of People in Household	0.044	0.021	0.006	-0.018
Female	0.048	-0.005	0.039	0.009

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$ . Model Fit: RMSEA = 0.041; CFI = 0.956.

Haehnel et al., accepted –  
*Journal of Family Issues*

# Childhood Family Environment and Adult Family Health

- Adverse childhood experiences (ACEs) are known to negatively affect lifelong physical and mental health
  - ACEs include family dysfunction, abuse, and neglect before age 18 years
- Positive childhood experiences (PCEs) lead to better health irrespective of ACEs
  - PCEs included positive family relationships and healthy relationships with adults and peers in the neighborhood and community; family routines; beliefs that provide comfort

# Results

**Table 2** Structural equation model of the effects of childhood experiences on family health in adulthood,  $N = 1030$

	Family Social and Emotional Health Processes			Family Healthy Lifestyle			Family Health Resources			Family External Social Supports		
	ACEs Model	PCEs Model	Adjusted Model	ACEs Model	PCEs Model	Adjusted Model	ACEs Model	PCEs Model	Adjusted Model	ACEs Model	PCEs Model	Adjusted Model
ACEs	-.17***	-	-.09**	-.12***	-	-.04	-.28***	-	-.20***	-.07*	-	-.03
PCEs	-	.27***	.24***	-	.27***	.26***	-	.31***	.25***	-	.30***	.31***
<b>Controls</b>												
Female	.03	.02	.02	-.03	-.04	-.04	.03	.01	.02	-.02	-.03	-.03
Age	.00	.00	-.01	-.04	-.05	-.05	.15***	.16***	.14***	-.23***	-.24***	-.24***
Married	.20***	.19***	.18***	.18***	.16***	.16***	.07*	.06	.05	.10**	.07*	.08*
Non-Hispanic White	-.01	.00	.00	-.01	.01	.01	.09**	.10**	.10**	.02	.04	.04
Bachelor's degree	.10**	.09**	.08	.17***	.15***	.15***	-.11**	.11**	.09**	.14***	.11**	.11**

Note: Coefficients are standardized. Adjusted model included both ACEs and PCEs along with controls

Model fit for fully adjusted model: RMSEA = .05; CFI = .95

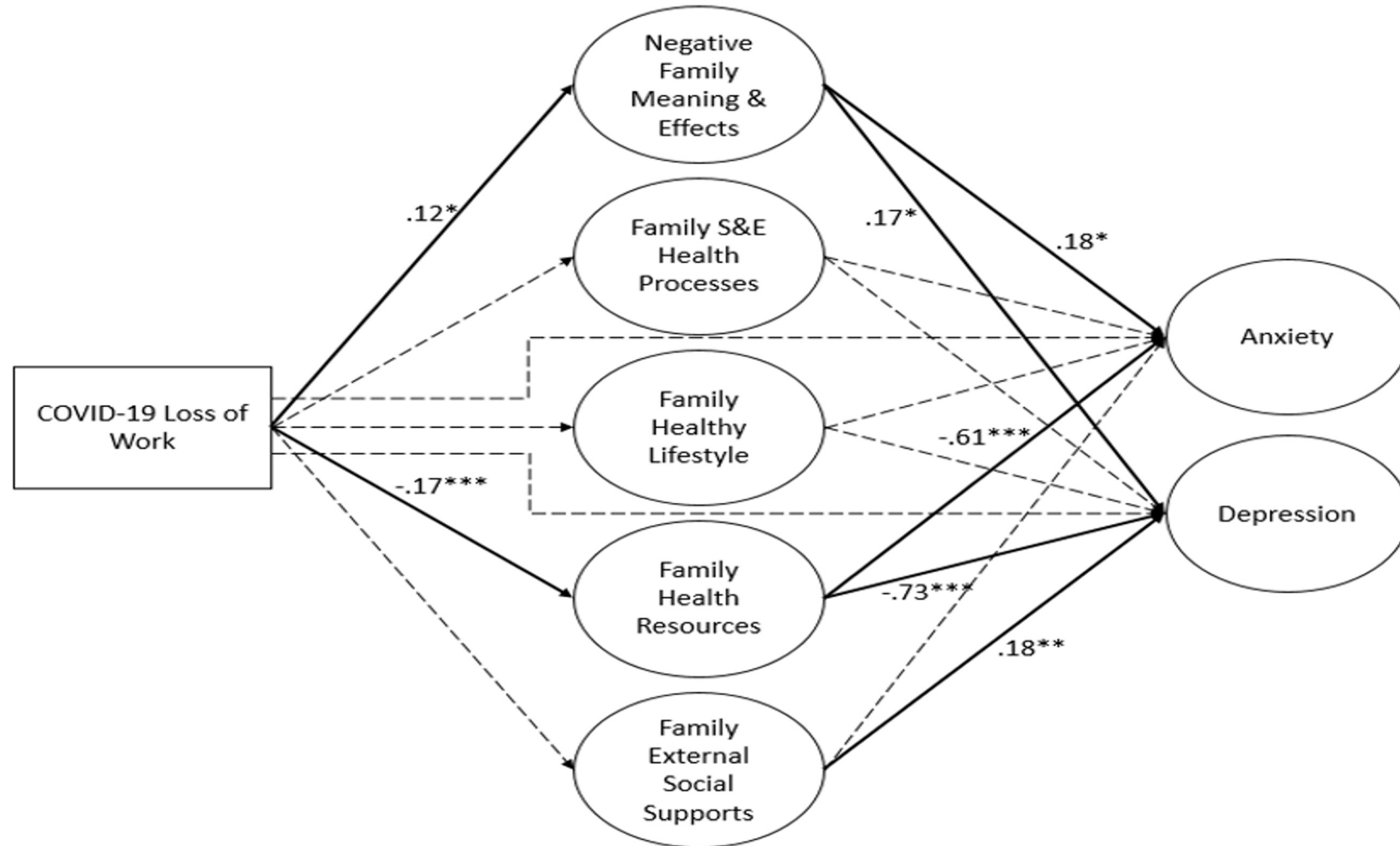
\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$



# COVID-19 and Family Health

- U.S. adult sample, one month into the COVID-19 pandemic
- $N = 416$
- Application of the Family Stress Theory on mental health during the COVID-19 pandemic
  - Family Health included as a resource
  - Also developed a family meaning-making scale
- **Crandall A, Daines C, Barnes MD, Hanson CL, & Cottam M.** “Family Wellbeing and Individual Mental Health in the Early Stages of COVID-19.” *Families, Systems, & Health*, 39 (2021), 454–466.

# COVID-19, Loss of Work Hours, Family Health and Mental Health, N=416



# COVID-19 and Family Health - 1 year later

- U.S. adult sample, one month into the COVID-19 pandemic
- $N = 442$
- Application of the Family Stress Theory on mental health one-year into the COVID-19 pandemic

**Crandall A, Daines C, Barnes MD, & Hanson CL.** “The Effects of COVID-19 Stressors and Family Life on Anxiety and Depression One-Year into the COVID-19 Pandemic.” *Family Process* (2022). DOI: 10.1111/famp.12771

# COVID-19, Family Health and Mental Health, *N*=442 (one year into pandemic)

Table 3. Multiple Logistic Regression of the Effects of COVID-19 Stressors, Family Health, and Family Meaning-Making on Mental Health 12-months into the COVID-19 Pandemic, *N*=442.

	<b>Depression</b>	<b>Perceived Worse Depression Due to COVID-19</b>	<b>Anxiety</b>	<b>Perceived Worse Anxiety Due to COVID-19</b>
COVID-19 Stressors	<b>1.58</b> (1.10-2.27)	1.18 (0.91-1.55)	<b>1.59</b> (1.12-2.25)	1.20 (0.92-1.56)
Family Health (General)	0.75 (0.44-1.29)	1.29 (0.90-1.86)	0.79 (0.47-1.36)	<b>1.75</b> (1.22-2.49)
Family Health Resources	<b>0.20</b> (0.11-0.35)	1.19 (0.82-1.71)	<b>0.20</b> (0.11-0.35)	1.24 (0.87-1.76)
Positive Family Meaning-Making	1.00 (0.62-1.61)	<b>0.68</b> (0.49-0.94)	0.95 (0.58-1.55)	<b>0.71</b> (0.52-0.97)
Negative Family Meaning-Making	<b>1.83</b> (1.14-2.92)	<b>2.44</b> (1.71-3.49)	<b>1.78</b> (1.10-2.87)	<b>2.01</b> (1.45-2.79)
<b>Controls</b>				
Female	0.94 (0.50-1.78)	1.18 (0.76-1.83)	0.76 (0.41-1.41)	0.99 (0.65-1.50)
Age	1.00 (0.97-1.03)	1.00 (0.98-1.02)	0.99 (0.96-1.02)	1.00 (0.98-1.02)
Married or Cohabiting	0.58 (0.22-1.51)	1.02 (0.51-2.04)	0.72 (0.27-1.93)	1.11 (0.58-2.15)
Bachelor's Degree or Higher	0.92 (0.42-1.98)	1.03 (0.59-1.79)	0.81 (0.36-1.79)	1.09 (0.64-1.86)
White/Caucasian	1.84 (0.92-3.67)	1.11 (0.69-1.79)	1.53 (0.79-2.96)	0.97 (0.61-1.53)
Live with Family	2.09 (0.84-5.15)	1.93 (0.96-3.85)	1.87 (0.73-4.78)	1.23 (0.64-2.36)
Income	0.82 (0.66-1.03)	0.91 (0.79-1.05)	0.87 (0.71-1.08)	0.89 (0.78-1.02)
Child Under 18 Years	1.60 (0.69-3.73)	0.58 (0.32-1.06)	1.02 (0.44-2.36)	0.73 (0.42-1.30)

# Family Health Explorations Study

- Purpose:
  - Examine the FHS as a true family member (multiple family members)
- 500 married/cohabiting couples (dyads)
  - parents with a child between 3-13 years old
- Baseline data collected in 2021
- Found that the scale works well when combining responses from both partners

Crandall A & Barlow M. "Validation of the Family Health Scale among Heterosexual Couples: A Dyadic Analysis." *BMC Public Health*, 22 (2022).

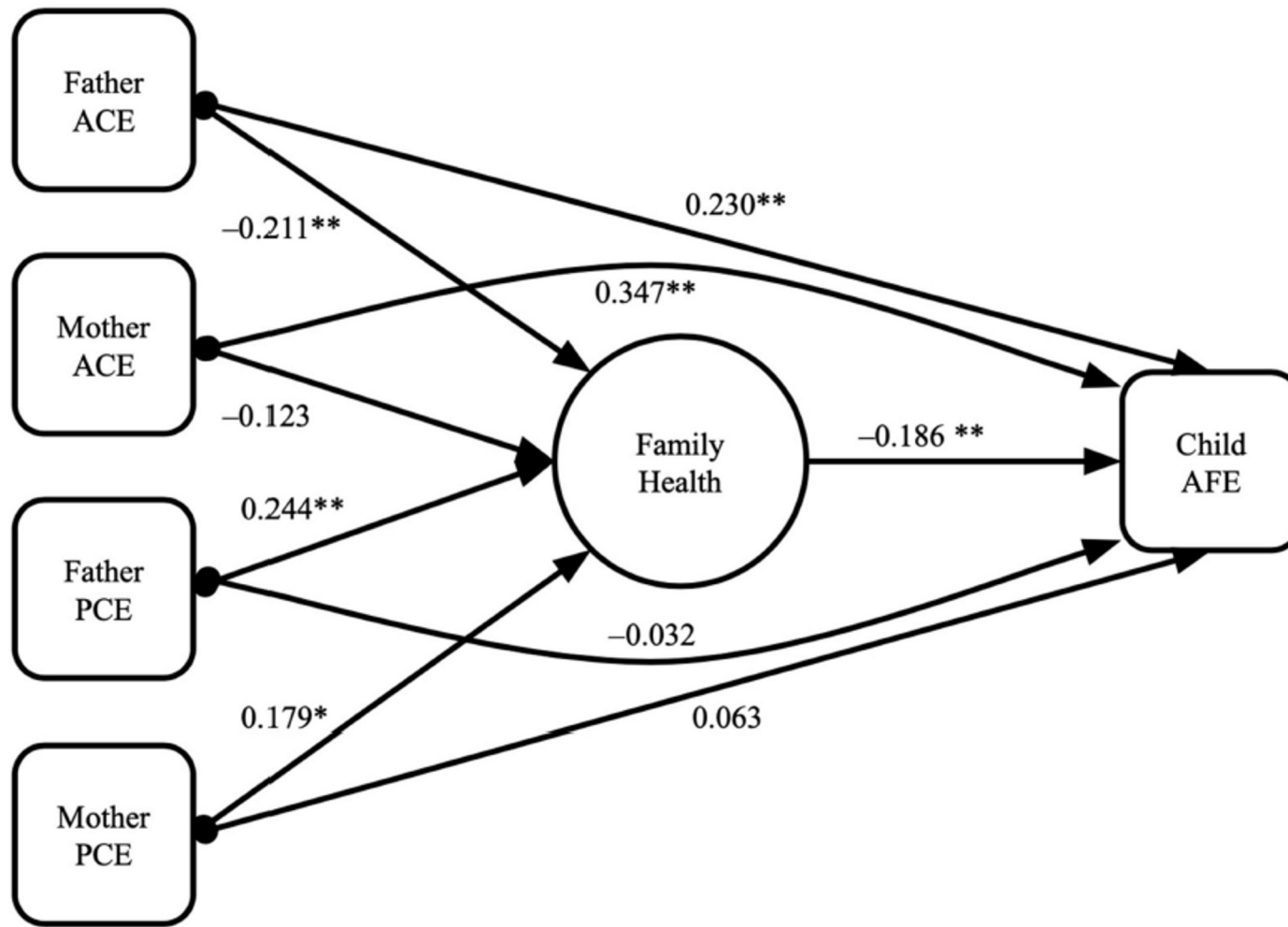



Figure 1. Structural equation model: Parental ACE and PCE associations with family health and child AFE. Notes: RMSEA = 0.042; CFI = 0.963. \*  $p < 0.05$ , \*\*  $p < 0.001$ .



# Assessing the Feasibility, Acceptability and Utility of the Family Health Scale-Short Form in Primary Care Pediatrics

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under award UA6MC32492, the Life Course Intervention Research Network.



# Project Aims




1. Assess feasibility of the Family Health Scale-Short Form in pediatrics
2. Examine pediatric provider and caregiver perspectives on the acceptability and utility of the screener



# Innovation



- *Systematically assess* family health and family health goals
  - *Optimize services and* programs in primary care pediatrics and other child and family serving programs to better support families and their family goals and milestones
  - *Document and 'get credit'* for the two- and three-generation work that pediatricians and pediatric providers do; contributions become measurable and aid our ability to demonstrate impact
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# Population and Setting (two clinics)

Racially diverse population, high levels of unmet social and health needs

- 58% African American/Black, 13% white, 25% Latinx/Hispanic, 2% Asian, 2%

Other

- 89% receive Medicaid

Majority reported having at least one unmet social need (e.g., housing, daycare or employment) on 2020 clinic survey

- Most commonly identified included help with daycare; housing; and heating

- 53% of children with a positive Ages & Stages Questionnaire score were connected to Early Intervention services

# Pediatric provider and staff interviews

- Semi-structured interviews
- Rapid Analysis Approach
- Nine providers and staff across two clinics
  - 4 pediatricians
  - 1 clinic manager
  - 1 hospital administrator
  - 2 front desk/registration staff
  - 1 social worker

# Meeting family health goals: challenges and opportunities

-Several cautioned that parents and providers may feel *they have too many questionnaires, not enough time*

-Others cautioned against bringing up *potentially embarrassing* experiences multiple times

“Our time is pretty limited to try to address a lot of the socially complex things that are going on with families....”

“Don’t repeat the question multiple times because people don't want to repeat their embarrassing stories”

# A welcoming clinic environment matters



- Patient-provider *trust and empathy* critical
- Utility of questions as a *conversation starter*

“If you don't get that warm inviting [feeling] you don't feel welcome in that clinic. You might shut down, you go in, you get your immunizations and you walk out because you know they're not going to be there to help me... they're probably going to make me feel ashamed of what's going on in my house....”

# Relational health, in families and in primary care



"We all want health, you know, families and relationships... whether it's family relationship or relationships with pediatricians and doctors and clinics. I just appreciate that you are looking at these things and trying to improve and maybe changing the ideas [that] you don't tell your business to people and reeducating that it's okay. That there is no judgement...these are key things and important things that we need to really look at and address"

# The importance of clear next steps

- Importance of clear *explanation as to why*
- Importance of clear potential *next steps*
- Note that success would depend on *community connections*

“If I'm asking these questions, I'd like to have something that's a little bit more proactive and a little bit more engaged than just that, and if that means bringing in support staff, which I think is probably the best way”

# Next steps: acceptability

- Parent/caregiver perspectives
  - Comfort level with questions
  - What's next
  - Role of primary care and family goals, family health
  - Implementation issues (chart systems, reimbursement, personnel, follow-up, frequency, target populations...)



# Current and Planned Research Using the FHS

- FHS scale validation in multiple cultures and languages
  - Studies planned or ongoing...
    - Brazil
    - China
    - Denmark
    - Indonesia
    - Hmong and Somali population in the U.S. (Family Matters Study)
    - RCT in the U.S.

# Future Research and Practice Directions




- Ongoing refinement of the scale (FHS) across cultures and languages
- Adaptation of the FHS for multiple ages and stages of family life
  - adolescent responders
- Examination of trends in family health globally

# Audience Discussion



Thinking about the Family Health Scale in the context of your field:

- Feasibility, acceptability, buy-in
  - Barriers and opportunities
  - Level of efficacy/confidence for taking family-focused approach to care for your practice?
  - Best practices for referrals
  - Perspective better suited for some health outcomes v. others?
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## Department of Public Health, Brigham Young University, Provo, UT:

- Michael D. Barnes, PhD, Professor and Associate Dean
- Carl L. Hanson, PhD, Professor and Chair
- Brianna M. Magnusson, PhD, Associate Professor
- Len Novilla, MD, MPH, Associate Professor
- Eliza Broadbent, BS MPH(c), Research assistant

## Department of Family Science, Brigham Young University, Provo, UT

- Erin Kramer Holmes, PhD, Associate Professor

## Department of Psychology, Brigham Young University, Provo, UT

- Blake Jones, PhD, Assistant Professor

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