P2-047

Differential Effects of Objective and Subjective Economic Hardship and Daily Stress in Diurnal Cortisol Regulation in Low-income, Mexican-origin Dyads

Elisa Ugarte, Chase J. Boyer, Andrea C. Buhler-Wassmann, & Leah C. Hibel
University of California, Davis

INTRODUCTION

- Caregivers' objective (e.g., unmet material needs) and subjective (e.g., financial concern) experiences of poverty impact adrenocortical regulation[1,2]
- Poverty and caregivers' psychological distress dysregulate infant cortisol reactivity[3,4]. However, few studies have incorporated these measures with daily mother-child biobehavioral processes.
- We explored the relations between objective and subjective aspects of economic hardship, and daily stress on dyadic diurnal cortisol regulation.

PARTICIPANTS

- 72 Mexican origin mothers (*M*age = 22.54 years, *SD* = 3.51) and their infants (*M*age = 11.75 months, *SD* = 6.13, 40.28% female) recruited as part of larger longitudinal study.
- Median income $35,000-$40,000 annually.
- Most mothers at a high school education.

MEASURES

Economic Hardship Questionnaire[5]
Daily stress: Momentary collection of how stressed mothers were feeling in the last 30 mins.
Cortisol Collected by mother on infant via saliva swabs (SalivaBio, LLC) at the same time as stress.

	Week 1			Week 2		
Home visit	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Demographics	EMA stress	EMA stress	EMA stress	EMA stress	EMA stress	EMA stress
Economic hardship				Cortisol	Cortisol	Cortisol

Sampled 3 times a day: Wake Evening Bedtime

Objective and subjective experiences of **economic hardship** and **daily stress upregulate cortisol** in caregivers and their infants

Take a picture of this QR code to check study references, details about our study methods, scripts and output. Please contact me for questions or suggestions: **eugarte@ucdavis.edu**

PREDICTING DIURNAL CORTISOL RHYTHMS

Over and above each other's cortisol

- **In caregivers,** unmet material needs and financial concern were associated with elevated cortisol at wake and flatter slopes throughout the day, respectively. Interestingly, after accounting for these distal experiences of hardship, caregivers who reported more daily stress had steeper slopes, on average.
- **In infants**, more proximal experiences of their caregivers' daily stress was associated with elevated cortisol at wake. Although marginal, low income-to-needs also related to higher cortisol at wake.
- **At each occasion**, caregivers who had higher (lower) cortisol also had infants with higher (lower) cortisol levels (*B* = *0.09,* p = .005).

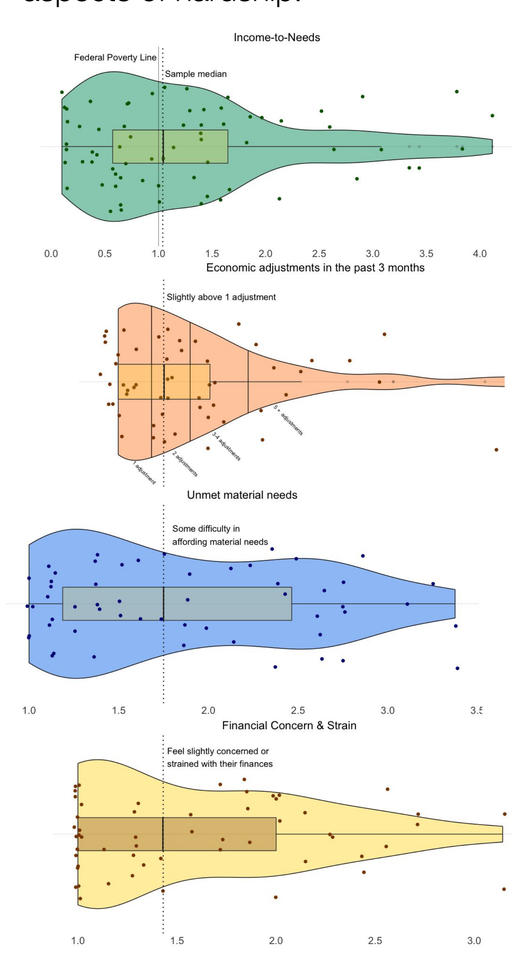
CONCLUSION

- In line with theories of stress[6] and poverty[7], both *experiences* of- and *perceptions* of hardship disrupt adrenocortical functioning in caregivers.
- Caregiver's daily stress levels might be a pathway through which economic hardship upregulates basal adrenocortical functioning in infants.
- These results may guide future research designed to understand and inform strategies for disrupting the association between poverty and cortisol dysregulation, and, in doing so, mitigating the impact of poverty on caregivers and infants.

The authors thank all the families and staff that are part of the California Babies Project. Funding provided by NIH to Dr. Leah Hibel, and by ANID Chile Doctoral Fellowship program; Grant No. 72180409 to Elisa Ugarte.

Objective & Subjective Poverty

In this high poverty sample, there was considerable variability in how participants experienced different aspects of hardship.



Roughly half of the sample lived slightly above and below the Federal poverty line (*M* = 1.29, *Median* = 1.04, *SD* = 1.01).

67% did at least 1 economic adjustment in the past 3 months (e.g.fell behind in bills, shut off A/C or changed eating habits to save $)

47% didn't feel very confident they could afford the home, food, or medical care they needed, among other items.

38% had some trouble sleeping because of financial problems, often worried about their financial situation, or were concerned about health insurance.

Predicting Cortisol Regulation

Analytic Strategy. Dual growth (e.g., maternal and child cortisol modeled simultaneously) multilevel models with random effects for intercept and linear slopes.

On average across three days, **caregivers' diurnal rhythm decreased sharply** from wake (Intercept β = 0.81, *p* <.001) to bedtime (Slope β = -0.89, *p* <.001*)***.** As expected, **infant also declined** (though less pronounced than mothers) from wake (Intercept β = 0.62, *p* <.001) to bedtime (Slope β = -0.66, *p* <.001*)*.

Table 1. Mother and infant average cortisol at wake and diurnal decline dependent upon objective and subjective aspects of poverty and diurnal stress.

	Mother Cortisol (ln)		**Infant Cortisol (ln)**	
	Waking Cortisol	Cortisol Slope	Waking Cortisol	Cortisol Slope
	β (SE)	β (SE)	β (SE)	β (SE)
Daily stress	0.04 (.04)	**-0.10** (.03)**	**0.18** (.07)**	-0.08 (.07)
Income to needs	0.01 (.05)	0.00 (.05)	***-0.12^{t} (.07)***	0.06 (.05)
Unmet needs	**0.14** (.05)**	-0.06 (.04)	-0.00 (.07)	-0.01 (.07)
Economic adjustments	-.01 (.05)	-0.01 (.03)	0.00 (.05)	-0.01 (.05)
Financial concern	-0.03 (.08)	**0.14** (.05)**	-0.06 (.08)	0.09 (.09)

Note. *t* <.07. *p <.05. **p <.01. ***p <.001. Covariates and random effects are not shown for clarity.

Estimated Model Results