Physiological Responses, Effortful Control, and Adjustment in Latino Youth

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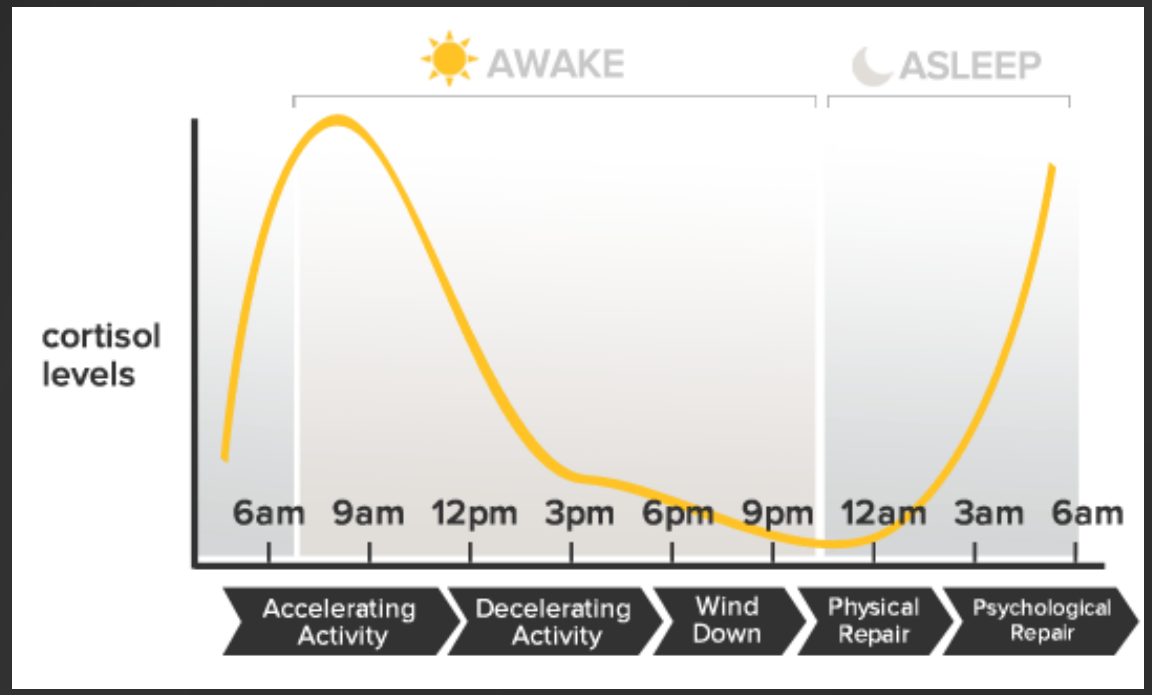
STRESS AND ADOLESCENCE

- Youth face challenges related to increased responsibilities and independence as they transition into adolescence
  - Disruptions in physiological systems
  - Increases in internalizing and externalizing problems
  - May be particularly salient for Latino youth who are more likely to also be exposed to chronic stressors
- Well-functioning HPA system may reflect resilience to stress and be associated with positive adjustment

Cortisol Awakening Response (CAR)



CAR and Self-Regulation

Self-Regulation- processes used to change one's own emotional state and behaviors; to prevent, initiate, or augment emotion responding; to modify the significance of an event for the self; and to modulate the behavioral expression of emotion

- Effortful Control:
  - key facet of self-regulation
  - involves individual differences in shifting and focusing attention as well as modulating emotion and behavior (Nigg, 2017)
  - Higher levels = expected to have an advantage in adapting effectively in stressful situations (Eisenberg & Valiente, 2004)

CAR and Self-Regulation

- Associations between cortisol dysregulation (reflected by flatter diurnal slopes or non-normative basal levels) and poorer self-regulation in children
  - (Blair et al., 2011; Lengua, et al., 2013; Sturge-Apple, et al. 2016)
- Elevated cortisol levels in children have also been linked to children's higher impulsivity, and poorer attention and inhibitory control
  - (Bridgett, et al., 2015; Lisonbee et al., 2010)
- Associations rarely tested in adolescents

STUDY AIMS

- We proposed that one possible pathway through which CAR is associated with adolescent depression is via youth's self-regulation

- We examined associations of children's and parents' CAR on children's effortful control, and in turn how these associations are linked to depression (cross-sectionally and longitudinally) in a preadolescent Latino sample

PRESENT STUDY: SAMPLE

- Participants: 119 5th and 6th grade Latino youths (*N* = 119, mean age = 11.53 yrs, 59% girls; 85.6% two-parent families)
- Families' mean yearly income was between $25,000-30,000
- Most parents had <u>not</u> completed high school (69% mothers, 79% of fathers)
- Mothers (92%) and fathers (90%) were predominantly born outside of the U.S (mostly Mexico)
  - Lived in U.S. on average 15.95 years (*SD* = 6.15)
- 96% of children were born in the U.S.

Measures

- **Cortisol Awakening Response (CAR)** T1
  - Saliva samples across 2 days (wake-up, and 30 min after)
  - Child, mom, dad
- **Effortful Control (EC) T1**
  - Early Adolescent Temperament Questionnaire-Revised (EATQ), 16 items, child report (α = .77)
- **Depressive Symptoms** T1 and T2
  - EATQ, 6-items, child report (T1 α = .77, T2 α = .79)

RESULTS

Zero-order correlations among variables and covariates (N = 119)

	1	2	3	4	5	6	7	8	9	10
1. Child CAR T1	1.00									
2. Mother CAR T1	.10	1.00								
3. Father CAR T1	.21†	.27*	1.00							
4. Child Effortful Control T1	.19*	-.12	.07	1.00						
5. Depressive Symptoms T1	-.18*	-.03	-.10	-.45**	1.00					
6. Depressive Symptoms T2	-.12	.15	-.02	-.24*	.50**	1.00				
7. Household Composition T1	-.11	-.14	.00	.06	-.15†	-.07	1.00			
8. Parent Education T1	.03	.16†	.00	.05	-.03	-.10	-.05	1.00		
9. Family Income T1	.04	.12	.13	.06	-.06	-.12	.27**	.26**	1.00	
10. Child Sex T1	-.19*	.04	-.07	-.06	-.02	-.24*	.14	-.03	.12	1.00
Mean	31.70	21.91	27.98	3.44	2.44	2.49	1.86	2.36	5.02	.41
Standard Deviation	(73.87)	(77.94)	(86.78)	(.55)	(.76)	(.75)	(.35)	(1.28)	(2.76)	(.49)

Note: **$p < .01$, *$p < .05$, †$p < .10$, (two-tailed). CAR = Cortisol Awakening Response. Child sex (boys = 1, girls = 0); Marital status (two-parent = 1, single-parent = 0).

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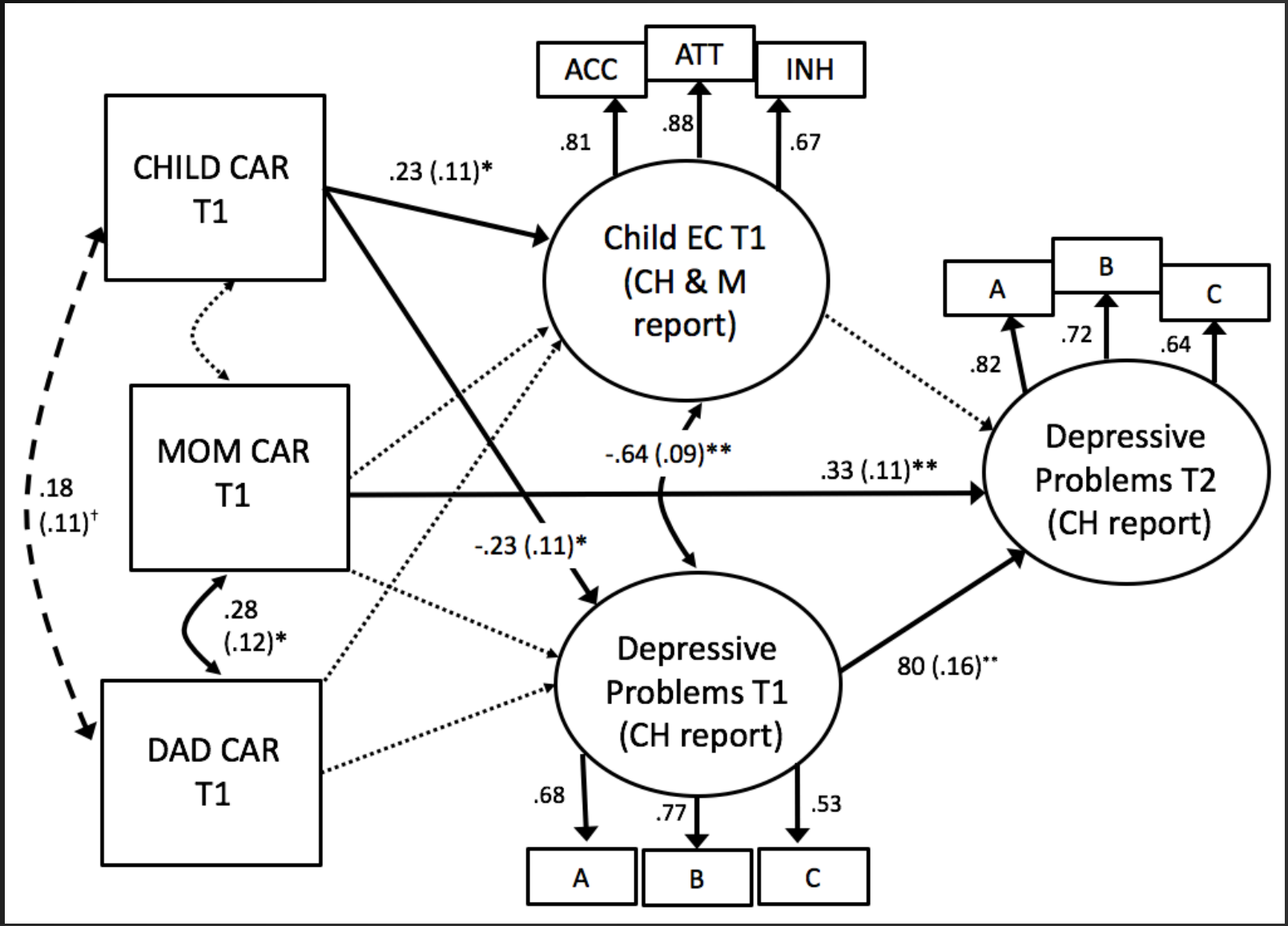

$^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. χ^2 (112, N = 119) = 128.951, $p > .05$; CFI = 0.957; TLI = 0.947; RMSEA = .036.

DISSCUSSION: CAR AND ADJUSTMENT

- Findings suggest that a normative CAR response may reflect a well- functioning HPA system which serves as a physiological resource during preadolescence (Bai & Repetti, 2015; Obradović, 2012)
- CAR positively associated with EC is consistent with other researchers who highlight the importance of robust HPA axis functioning for the development of self-regulatory abilities in youth (Davis, Bruce, & Gunnar, 2002; McEwen et al., 2015)

DISSCUSSION: CAR AND ADJUSTMENT

- CAR negatively with depressive problems (only concurrent) consistent with research demonstrating that altered cortisol patterns (i.e. blunting) is associated with depressive problems in adolescents (e.g. Adam, 2012; Alink et al., 2008; Marceau, Ruttle, Shirtcliff, Essex, & Susman, 2015
  - Inconsistent with research finding high CAR is predictive of depression (e.g. Adam, 2010; Rickard et al., 2016)
  - More research in diverse samples needed
- More research is needed to assess positive relation between mother's CAR and child depression across time

FUTURE DIRECTIONS

- Additional longitudinal research is needed
- Assess other aspects of cortisol functioning
- Given the expanding U.S. Latino population, improving the health of Latino youth is a critical goal for health professionals, researchers, and policy-makers
- Better understanding how healthy physiological processes are associated with potential resilience processes such as EC during early adolescence may have concomitant adjustment benefits for youth such as improved mental health, adjustment, and coping skills

Questions?

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