

# The Effect of Microaggressions on African American Couples' Cortisol Levels

Jocelyn Arroyo & Tracy DeHart, Ph.D.

Loyola University Chicago

## Introduction

- The goal of this study was to examine actor and partner effects of perceived discrimination on African American couples' stress and cortisol levels.
- Perceived discrimination is positively associated with levels of cortisol in scalp hair among African Americans (Lehrer et al., 2020).
- Assessing cortisol concentration in hair reveals information about long-term responses to stress up to 3 months or longer (Stadler & Kirschbaum, 2012).
- Vicarious racism such as maternal experiences of discrimination influence child health and biomarkers of stress (Condon et al, 2019). This suggests that there is a stress spillover effect onto close relationship partners.

## Hypotheses:

- African Americans who reported more discrimination over the past 3 months would have higher perceived stress and higher cortisol levels.
- African Americans whose partners reported more perceived discrimination over the past 3 months would have higher perceived stress and higher cortisol levels.

## Methods

### **Participants:**

- 41 African American couples were recruited via CTA red line ads.
  - 30 opposite gender couples
  - 11 same gender couples
- Average age = 44.2 years
- Average relationship length = 9.17 years

### **Procedure:**

- African American couples were recruited via advertisements on the Chicago Transit Authority (CTA) Red Line
- Participants were asked basic demographic questions. They completed a measure asking about their daily life experiences and how bothered they were by these experiences.
- Participants also provided a hair sample to measure cortisol concentration.

### **Measures:**

- Perceived Discrimination: The 18-item Daily Life Experiences scale (Harrell, 1994) was used (e.g., "Being observed or followed while in public places") to assess discrimination and bother over the past 3 months. For each item, participants rated their agreement on an 8-point Likert-scale (0 = Did not occur, 1 = Not at all negative, 7 = Extremely negative).
- Cortisol: Collected hair samples were shipped overnight to an endocrine laboratory in Germany (Kirschbaum lab) for assaying for cortisol levels.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	44.20	14.3	-									
2. Gender	1.41	.495	-.056	-								
3. Income	1.37	.686	-.107	.028	-							
4. Education Level	2.29	.824	-.134	.167	.192	-						
5. Hair Cortisol	3.21	4.90	-.024	.072	.106	-.120	-					
6. Microaggressions	1.90	1.02	-.323**	.327**	-.041	.008	-.069	-				
7. Microaggression Bother	2.56	1.53	-.101	.144	-.063	.110	.123	.657**	-			
8. Perceived Stress	3.90	1.28	-.063	.141	-.083	.231	.141	.312*	.592**	-		
9. Partner's Microaggression Experienced	1.92	1.03	-.108	-.128	.202	-.071	.059	-.009	.171	.064	-	
10. Partner's Microaggression Bother	2.61	1.53	.056	.121	.253	-.035	.327*	.003	.094	-.128	.644**	-
11. Partner's Perceived Stress	3.94	1.24	.046	-.041	.023	.092	.081	-.134	-.135	-.046	.287*	.580**

Note. N = 82. \*p < .05, \*\*p < .001. Gender was recoded such that 1 = woman, 2 = man

## Results:

- Participants' reports of their own microaggression experiences and how much it bothered them were associated with their own perceived stress.
- However, participants' partners' reports of their microaggression experiences and how much it bothered them were associated with participants' hair cortisol levels.

## Discussion:

- Results suggest that there is a stress spill over in cortisol when participants' partners were more bothered by the microaggressions they experienced.
- There is a slew of health and psychological effects related to high cortisol levels. Understanding how daily life experiences of microaggressions impact couples' stress levels can inform interventions to cope with stress.
- One limitation of this pilot study was the small sample size.

- Future research should look at intersecting identities and examine the relationship between perceived discrimination and cortisol across different racial identities.

## References:

- Condon, Holland, M. L., Slade, A., Redeker, N. S., Mayes, L. C., & Sadler, L. S. (2019). Associations Between Maternal Experiences of Discrimination and Biomarkers of Toxic Stress in School-Aged Children. *Maternal and Child Health Journal, 23*(9), 1147–1151.
- Harrell, J. P., Hall, S., & Taliaferro, J. (2003). Physiological responses to racism and discrimination: An assessment of the evidence. *American Journal of Public Health, 93*, 243-248.
- Lehrer, H. M., Goosby, B. J., Dubois, S. K., Laudenslager, M. L., & Steinhardt, M. A. (2020). Race moderates the association of perceived everyday discrimination and hair cortisol concentration. *Stress (Amsterdam, Netherlands), 23*(5), 529–537.
- Stadler, T., Kirschbaum, C. (2012). Analysis of cortisol in hair—state of the art and future directions. *Brain, Behavior, & Immunity, 26*, 1019-1029.

## Acknowledgements:

- This research was completed with my wonderful faculty mentor Dr. Tracy DeHart, the Self and Social Interaction (SASI) Lab, and the Cura Scholars Research Program.