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Kymberlee M. O'Brien
University of Massachusetts Boston

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Objective and Subjective Stress Differences: Foreign-Born and US Native Adults in Boston Communities

K.M. O’Brien
Chris Thompson
Jerrold Meyer
Ed Tronick
Celia L. Moore
Overview

• Community engagement and partnerships
• Measures of biological and subjective stress
• Timeline
• Preliminary Pilot Results:
  Discuss differences in stress for foreign-born and US adults living in ‘high-risk’ Boston communities, based on ‘Health of Boston’ (Boston Public Health Commission) risk identifiers: e.g., zipcode, density, poverty, unemployment
HORIZON Center UMB and Project Community Partners

- **COHS**: Cherishing our Hearts and Souls (founded 1997)
  Grassroots coalition (residents, community organizations, professionals)
  Minority health and health disparities.
  Roxbury, Dorchester, and surrounding inner Boston neighborhoods
- **CRAB**: Community Research Advisory Board (founded 2005 by COHS)
  Mission to serve as bridge between researchers and community
  Incorporated nonprofit, 2012
  (Organizational support moved from HSPH to UMB 2009)
- **Project Partner**: Christopher Thompson, EdD, Executive Director of Quincy Geneva Housing, Inc. Grove Hall area, Roxbury/Dorchester
  Membership links with CRAB and COHS
  Participated in initial research plan, community liaison, recruitment, community educational follow-up

**TEAM**
- Our team includes UMB and RCC students Research Assistants, many of whom are first generation in higher education and international students
- RAs helped with translating materials, recruiting, testing
- Community locations: YMCAs, Churches, Vine St. Center, UMB campus
AIMS

*Improve community engagement.*
- Partnership for recruitment, implementation of the study, and dissemination of findings.

*Identify stress-related differences between foreign and US-born adults.*
Pilot Study

**Population:** N = 50 (about 1/2 of sample for preliminary results)
Foreign-born and US Natives Boston (ages 18-30, $M = 21.80$, 65% female, 50% foreign born)

**Subjective Stress and Scales** (available in 4 languages):
Perceived Stress *In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?*

CHAOS (Confusion, hubbub, order) *At home we can talk to each other without being interrupted*

City Stress Index *Vandalism is common in my neighborhood*

Lifetime Discrimination *Were you discouraged by a teacher or advisor from seeking higher education?*

Daily Discrimination *Do people act as if they think you are dishonest?*

Social Identity - *How much pride do you have in your heritage group/ how much identify*

Subjective Social Status Ladder (from 1-10)

Modern Racism -(assesses negative biases) *Immigrants should not push themselves where they are not wanted*

Self Esteem - *I take a positive attitude toward myself.*

PANAS 20 emotion words: baseline and post (excited, proud, strong, hostile, jittery, guilty)
**Biological Stress and health measures:**
- Hair Cortisol—biomarker of chronic stress
- Waist hip ratio, resting blood pressure
- Cardiovascular indices

**Cognitive and Task measures** (non-language based):
- Stroop
- Emotion Go No Go
- Raven’s Fluid Intelligence

**Controls: to control for factors that may influence outcome measures**
- Prescription meds
- Birth control or any corticosteroid
- Hair treatment: wash, dye, weave, straighten, etc.
Timeline

Arrival
Consent
Attach CV
monitor

Objective
Stress
Measures
Hair
Resting BP

Subjective
Stress
Measures
PSS
discrimination

Debrief
Thanked
and paid
Hair cortisol

Hair cortisol (hCORT) is a relatively new biomarker of chronic stress via long-term alterations in hypothalamus-pituitary-adrenal axis (HPA) activity. Under stress, cortisol is released.

Since hair grows 1 cm per month, 3 cms can measure cortisol remnants reflecting the past 3 months (Davenport, Tiefenbacher, Lutz, Novak, & Meyer, 2006).

We are the first research group to use hair cortisol to examine social and structural factors with this objective chronic stress measure: discrimination, poverty, social exclusion and status, acculturation related stress.
RESULTS: Objective stress measures

Hair Cortisol

US natives are slightly higher than the foreign born individuals

\[ t(44) = 1.6, \ p < .10, \]
Hair Cortisol

When examining only foreign-born individuals, those who immigrated to the US before the age of 15 have higher hair cortisol.
Blood pressure: Interaction Nativity x sex
Male US residents showed the highest resting SBP

\[ F(1,43)=11.32, \ p<.001 \]
RESULTS: Subjective Stress

Subjective Stress

$\text{t(42)}=2.9, p<.05 \text{ Scale 16-64}$

Subjective Status ladder

$\text{t(42)}=3.2, p<.05, \text{ Scale 1-10}$

Perceived Stress Scale

$\text{t(42)}=2.4, p<.05 \text{ Scale 0-40}$
Social identity:

*Foreign born adults are significantly strongly in social identity. Is this protective?*

![Graph showing the difference in social identity between US natives and foreign-born adults. The graph indicates a statistically significant difference with t(50) = 2.7, p < .05.]
Is a stronger social identity protective for health outcomes and stressors?
SUMMARY of preliminary findings

**Objective Stress Outcomes**
- *Hair cortisol values were higher* for US natives compared to foreign-born adults, living in similar high-risk neighborhoods Boston.
- Although, Hair cortisol values were higher for foreign born adults who immigrated to the US *before the age of 15*.
- Resting systolic blood pressure was also significantly lower for both male and female foreign born adults.

**Subjective Stress Outcomes**
- Broadly, the foreign born adults rated *subjective stress as lower* than the US natives, unless they reported greater social identity.
- Although, Foreign born adults rated *subjective social status as lower* than US natives.

**Social identity**
- Social identity was significantly *stronger for foreign-born adults*.
- Although, the benefits of stronger social identity were found more for the US but only for objective (blood pressure) not subjective (perceived stress).
- For some, stronger social identity was related to greater negative stressors, for example, reporting of greater Daily discrimination.

• *Contrary to general findings: but consistent in our samples.*
• *Argument for additional neighborhood level and community research.*
• *Limitations: no comparison group. All Ps living in high-risk areas.*
Thank you!

Ira Ockene
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Celia Moore
Chris Thompson
Jerry Meyer
Ed Tronick

RA team
Richshelle Gabrielle
Naila Farhana
Loveth Omo
James Normil