Objective and Subjective Stress Differences: Foreign-Born and U.S. Native Adults in Boston Communities

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

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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.

$t(21)=2.06$, $p<.052$, 
**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 Status ladder

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

City Stress Index

Scale 1-10

US native | Foreign born

Perceived Stress Scale

Scale 0-40

US native | Foreign born

\[ t(42) = 2.4, p < .05 \]

Daily Discrimination

Scale 5-20

US native | Foreign born

\[ t(45) = 1.6, p = .09 \]

Subjective Stress

\[ t(42) = 2.9, p < .05, \text{Scale 16-64} \]
Social identity:
*Foreign born adults are significantly strongly in social identity. Is this protective?*

![Bar chart showing social identity for US natives and foreign born adults. The foreign born group has a higher social identity score with a statistical test result of t(50) = 2.7, p < .05.](chart.png)
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!

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Suzanne Cashman
And all CCTS!

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