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

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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)
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 Stress

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

Subjective Status ladder

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

Perceived Stress Scale

- $t(42)=2.4$, $p<.05$, Scale 0-40

Daily Discrimination

- $t(45)=1.6$, $p=.09$
Social identity:
Foreign born adults are significantly strongly in social identity. Is this protective?
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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