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

Kymberlee M. O’Brien
University of Massachusetts Boston

Chris Thompson
Quincy Geneva Housing Corp.

Jerrold S. Meyer
University of Massachusetts - Amherst

See next page for additional authors

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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.

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

Subjective Status

US native    Foreign born

City Stress Index

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

Perceived Stress Scale

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

Subjective Stress

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

Daily Discrimination

$\text{t}(45) = 1.6, \ p = .09$

US native    Foreign born

Subjective Status

$\text{t}(42) = 3.2, \ p < .05 \ Scale \ 1-10$
Social identity:
*Foreign born adults are significantly strongly in social identity. Is this protective?*

![Graph showing social identity comparison between US natives and foreign born adults.]

$t(50) = 2.7, p < .05$
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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And all CCTS!

Celia Moore
Chris Thompson
Jerry Meyer
Ed Tronick

RA team
Richshelle Gabrielle
Naila Farhana
Loveth Omo
James Normil