Disparities in Self-Rated Health Among Chinese Immigrants in the U.S.

*Exploring Social Identities*

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Disclosures

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Learning Objectives

The learner will be able to:

- identify factors associated with poor health outcomes among U.S. Chinese immigrants.
- explain importance of incorporating an intersectionality framework in health disparities studies.
Introduction

- Health disparities
  - Unfair and avoidable differences in health status seen within and between countries.
- Social determinants of health
  - Mostly responsible for health disparities.
- U.S. immigrants
  - Who suffer a disparate burden of disease, injury, premature death, disability, and loss of economic opportunities.

- Mexico: 27% (3 million)
- China: 7% (3 million)
- India: 6%
- Philippines: 5%
- Cuba: 3%
- Vietnam: 3%
- El Salvador: 3%
- Other: 46%
Despite the singularly large U.S. Chinese immigrant population, most studies investigating social determinants of health aggregate Asian populations, with limited studies employing Chinese subgroup analysis.
Disparities in Asian Immigrant Health

- Tuberculosis and hepatitis B
- Breast, lung, colorectal cancer, diabetes and HIV
- Uncontrolled hypertension
- Employment in high-risk occupations
- Smoking
- Suicide in older women
- Depression in adolescent girls
- Worse self-perceived health
- More physically and mentally unhealthy days
Intersectionality Framework\textsuperscript{12,13}

- Defined by concepts of inequality and social justice.
- Immigrants not understood by any one social identity (determinant) (i.e., gender, race or immigrant status).
- Rather, social identities interact producing distinct experiences of inequality.
Inequality not gauged by summing up disadvantaged experiences.

Inequality gauged by how disadvantages \textit{interact} at micro level of individual experience and \textit{intersect} at macro level of sexism, racism, nationalism.

Gender + Race + Status (additive approach)

Gender \times Race \times Status (multiplicative approach)
What this Study Adds

- Examines social identities not previously studied in Asian immigrants.
- Focuses on (under-researched) Chinese immigrant population.
- Moves beyond examining individual social identities (additive approach).
- Investigates how identities interact on individual and structural level (multiplicative approach).
Research Question

How do social identities including age, gender, education, language preference, co-ethnic ties, acculturative stress, discrimination, and social position interact to produce disparities in self-rated health among Chinese immigrants?
Methods

- **Design:** Secondary analysis of cross-sectional data from The National Latino and Asian American Study (NLAAS)
- **Data collection:** May 2002 - November 2003
- **Sample:** Probability sample of U.S. Chinese Americans born outside of the U.S. (n=592)
- **Age:** 18+ years (Mean = 42.25 years, SD 1.27 years)
- **Gender:** 53% female, 47% male
- **Education:** Mean = 13.5 years (SD = .27 year)
Measures

Outcome variable
Self-rated Health
How do you rate your overall health? Excellent, very good, good, fair, poor

Predictor Variables (Social Identities)
- Age
- Gender
- Education (proxy for socioeconomic status)
- Language preference & Co-ethnic ties (proxy for acculturation)
- Acculturative Stress Frequency of Discrimination
- Social Position
**Method of Analysis**

**Additive Approach**
- To establish if social identities individually make a significant contribution to explaining variability in SRH.

**Multiplicative Approach**
- To establish which of 15 two-way interactions interact with one another as predictors of SRH.

**R-squared Values**
- To establish if extent of multiplicative models’ contributions exceeds additive models.
## Results

### Table 1: Main Effects and Additive Regression Models

<table>
<thead>
<tr>
<th>Social Identities</th>
<th>Main Effect Model b</th>
<th>Additive Model b</th>
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<tbody>
<tr>
<td>Gender (male)</td>
<td>.27** (.0577, .4726)</td>
<td>.27** (.0721, .4597)</td>
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<tr>
<td>Age at Interview</td>
<td>-.01 ** (-.0223, -.0051)</td>
<td>-.01 (-.0140, .0010)</td>
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<td>Education</td>
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<td>Language Preference</td>
<td>.26*** (.1615, .3561)</td>
<td>.16*** (.0709, .2910)</td>
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<td>Co-ethnic Ties</td>
<td>-.08 (-.2482, .0797)</td>
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<td>Acculturative Stress</td>
<td>-.24*** (-.3472, -.1395)</td>
<td>-.14* (-.2723, -.0090)</td>
</tr>
<tr>
<td>Discrimination</td>
<td>.19* (.0229, .3472)</td>
<td>.05 (-.0814, .1815)</td>
</tr>
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<td>Social Position</td>
<td>.12*** (.0737, .1699)</td>
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\(b = \text{unstandardized coefficients, } (\text{ }) = 95\% \text{ confidence intervals, } \ast p \leq .05, \ast\ast p \leq .01, \ast\ast\ast p \leq .001\)
Table 2: Main Effects and Additive Regression Models

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$b = \text{unstandardized coefficients, } (\text{ }) = 95\% \text{ confidence intervals, } ^*p \leq .05, ^{**}p \leq .01, ^{***}p \leq .001$
# Results

**Table 3**: Significant Two-way Interactions Explained Variances of Interaction and Main Effects Models

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<tr>
<th>Social Identities</th>
<th>$b$</th>
<th>90% CI</th>
<th>$R^2$ *</th>
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<tr>
<td>Age by Language Proficiency</td>
<td>0.0049</td>
<td>0.0008, 0.0089</td>
<td>0.07</td>
</tr>
<tr>
<td>Gender by Education</td>
<td>-0.0461</td>
<td>-0.0880, -0.0048</td>
<td>0.11</td>
</tr>
<tr>
<td>Education by Acculturative Stress</td>
<td>-0.0313</td>
<td>-0.0537, -0.0091</td>
<td>0.10</td>
</tr>
<tr>
<td>Education by Social Position</td>
<td>0.0133</td>
<td>0.0009, 0.0258</td>
<td>0.09</td>
</tr>
<tr>
<td>Social Position by Discrimination</td>
<td>0.0723</td>
<td>0.0087, 0.1360</td>
<td>0.10</td>
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</tbody>
</table>

* after adding interaction to main effects model
Estimated Plots for Two-way Interactions
Age by Language Preference

Predicted SRH

Language Preference

Minimum Maximum

Minimum Age Mean Age
Estimated Plots for Two-way Interactions
Age by Language Preference

- Minimum Age
- Mean Age
- Maximum Age
Estimated Plots for Two-way Interactions

Gender by Education

Predicted SRH vs. Education

Minimum to Maximum Education

Predicted SRH:
- 1
- 2
- 3
- 4
- 5

Education:
- Minimum
- Maximum

Male
Estimated Plots for Two-way Interactions
Gender by Education

Predicted SRH

Education

Minimum

Maximum

Female

Male
Estimated Plots for Two-way Interactions

Education by Acculturative Stress

- Minimum Acculturative Stress
- Maximum Acculturative Stress

Predicted SRH

- Mean Education
- Maximum Education
Estimated Plots for Two-way Interactions

Education by Acculturative Stress

Results
Estimated Plots for Two-way Interactions
Education by Social Position

Results
Estimated Plots for Two-way Interactions

Education by Social Position

Predicted SRH vs Social Position

- Minimum Education
- Mean Education
- Maximum Education
Estimated Plots for Two-way Interactions

Social Position by Discrimination

- Predicted SRH vs. Frequency of Discrimination
  - Minimum Social Position

25th Percentile vs. 75th Percentile
Estimated Plots for Two-way Interactions
Social Position by Discrimination

Predicted SRH

25th Percentile  75th Percentile

Frequency of Discrimination

Minimum Social Position
Mean Social Position
Maximum Social Position
Findings

► 4 of 8 social identities significant in additive stage.

► 7 of 8 interacted significantly with at least one other in multiplicative stage.

► All 5 interactions contributed to variability in SRH beyond additive stage (7-11%).
Findings

Women with higher education
Higher acculturative stress and education
Lower social position and greater discrimination
Higher social position and lower education

English language preference at any age
Men with higher education
Higher acculturative stress and lower education
Higher social position and education
Conclusions

- U.S. Chinese immigrants experience health disparities uniquely different from aggregate Asian populations.

- To reduce disparities
  - Increase translation and English language education.
  - Foster culturally competent health promotion.
  - Advance diversity and cultural competence of workforce.
  - Expose class systems based on social status.
  - Expand programs supporting gender equality and access to education.
  - Encourage use of community resources to improve health knowledge.
  - Emphasize importance of inter-group contact to reduce discrimination.

- Findings point to importance of including an intersectionality framework.
Study Limitations

- Cross-sectional data limits causal inferences.
- Acculturation is multifaceted, making it difficult to measure.
- Difficult to operationalize and measure intersecting identities.
- Older dataset may not represent current national trends.
References
