Physical Activity in U.S. Asian Indian Women: Comparison of Acculturation Level and Immigrant Status

Nitha Mathew Joseph, PhD, RN
Asian Indians are one of the largest & fastest growing Asian-American groups in the US (3.19 million)

Greater risk for morbidity & mortality from cardiovascular disease (CVD) & diabetes

Lower rates of participation in physical activity

Acculturation risks for obesity, diabetes, & CVD

Acculturation influences physical activity in Asian Indians

NO study among Asian Indian Women
SPECIFIC AIM

- To assess the relationships among physical activity, acculturation level, and immigrant status in Asian Indian women across three domains of physical activity (occupational, household, and leisure) & sedentary behavior
METHODS

- Descriptive, cross-sectional design

- Sample size: 261 Asian Indian women (Mean age = 35)

- Study settings: Indian community churches, Hindu temples, Muslim mosques, & Indian cultural organizations in Houston

- International Physical Activity Questionnaire (IPAQ) long form, Modified Suinn-Lew Asian Identity Acculturation scale (M-SL-ASIA), & Physical Functioning -10 scale (PF-10 scale)
DATA ANALYSIS

- Participant categories:
  - low acculturation–immigrant, n = 123 (47%)
  - high acculturation–immigrant, n = 41 (16%)
  - high acculturation–nonimmigrant, n = 97 (37%)

- Analyses of covariance or Kruskal-Wallis test to compare study variables among acculturation-immigrant groups
<table>
<thead>
<tr>
<th>Variable</th>
<th>Low Acculturation-Immigrant $(n=123)$</th>
<th>High Acculturation-Immigrant $(n=41)$</th>
<th>High Acculturation-Nonimmigrant $(n=97)$</th>
<th>$F$ (2,258)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>38.04</td>
<td>7.60</td>
<td>34.98</td>
<td>9.16</td>
</tr>
<tr>
<td>Years in the United States</td>
<td>9.74**</td>
<td>5.73</td>
<td>18.29**</td>
<td>8.96</td>
</tr>
<tr>
<td>Household Income (U.S. dollars)</td>
<td>Median</td>
<td>IQR</td>
<td>Median</td>
<td>IQR</td>
</tr>
<tr>
<td></td>
<td>100000</td>
<td>60000</td>
<td>100000</td>
<td>87500</td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>95**</td>
<td>16</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Partnered</td>
<td>116</td>
<td>94</td>
<td>33</td>
<td>81</td>
</tr>
<tr>
<td>Employed</td>
<td>111</td>
<td>90</td>
<td>31</td>
<td>76</td>
</tr>
<tr>
<td>Graduate</td>
<td>32</td>
<td>26</td>
<td>18</td>
<td>44</td>
</tr>
</tbody>
</table>

* = $p < .0001$ (omnibus), ** = $p < .05$ (post-hoc)
# Group Differences in Physical Activity & Acculturation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low Acculturation-Immigrant (n=123)</th>
<th>High Acculturation-Immigrant (n=41)</th>
<th>High Acculturation-Nonimmigrant (n=97)</th>
<th>( H(2) )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total PA</strong></td>
<td><strong>102.63</strong> 0.26</td>
<td>152.86 34.70</td>
<td>107.73 38.88</td>
<td>19.66*</td>
</tr>
<tr>
<td><strong>Occupational PA</strong></td>
<td><strong>59.80</strong> 0.26</td>
<td>157.41 3.30</td>
<td>113.13 1.65</td>
<td>30.48*</td>
</tr>
<tr>
<td><strong>Household PA</strong></td>
<td>14.00 18.86</td>
<td>9.00** 20.65</td>
<td><strong>0.00</strong> 25.05</td>
<td>24.27*</td>
</tr>
<tr>
<td><strong>Leisure PA</strong></td>
<td>0.00** 94.98</td>
<td>6.60 130.94</td>
<td><strong>21.90</strong> 176.71</td>
<td>66.59*</td>
</tr>
<tr>
<td><strong>Acculturation Score</strong></td>
<td><strong>2.09</strong> 0.26</td>
<td>2.98** 0.44</td>
<td><strong>3.61</strong> 0.44</td>
<td>472.64*</td>
</tr>
<tr>
<td><strong>Sedentary Behavior</strong></td>
<td><strong>26.84</strong> 18.86</td>
<td>34.12** 20.65</td>
<td><strong>47.22</strong> 25.05</td>
<td>24.20*</td>
</tr>
</tbody>
</table>

* = \( p < .001 \) (omnibus),
** = \( p \leq .01 \) (post-hoc)
CONCLUSION

- **Acculturation**: inversely R/T occupational & total physical activity; positively R/T leisure physical activity & sedentary behavior (poss. confounders: employment/student roles)

- **Statistically significant**: acculturation & physical activity
  - Strong support for various cultural factors playing important role in choice & endorsement of different physical activities

- Understanding cultural differences in physical activity patterns will help nurses develop culturally appropriate counseling & interventions
LIMITATIONS

▪ Convenience sampling i.e. unequal representation of individuals across a distribution of immigration variables.

▪ Excluded participants non fluent in English

▪ IPAQ is a complex self-report measurement, possibly leading to over reporting of physical activity

▪ Detailed information of occupation not collected during study
FUTURE DIRECTION

- Explore cultural factors that specifically affect different types of physical activity, specifically leisure activities.

- Interventions to increase physical activity R/T long-term efficacy for Asian Indian women

- Identify difference in the health effects between job-related physical activity & leisure physical activity

- Replication of study on a national sample of Asian Indian women
FUNDING

➢ Research Grant in connection to dissertation: Texas Nurses Association, District 9 (2014)
REFERENCES


QUESTIONS?
Thank you!