Differences in exposure to long working hours and poor self-reported general health in Latin American and Spanish born workers in Spain: The PELFI cohort study

Ana Cayuela¹, Sadie Conway², George Delclos²,³, Elena Ronda¹,³,⁴

¹ Grupo de Investigación en Salud Pública. Universidad de Alicante, Spain.
² The University of Texas Health Science Center, School of Public Health, Houston, Texas, USA
³ Centro de Investigación en Salud Laboral (CISAL). Universidad Pompeu Fabra. Spain
⁴ Subprograma de Inmigración y Salud – Centro de Investigación Biomédica En Red Epidemiología y Salud Pública (SIS-CIBERESP)
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Long work hours (LWH) have been shown to be detrimental to health due to:

- Increased workplace exposures
- Reduced time for physiological recovery
- Behavioral lifestyle restrictions

LWH have been associated with numerous adverse health conditions:

- Poor general health
- Cardiovascular disease
- Musculoskeletal disorders
- Work-related injuries
- Depression
- Sleep disruption
Patterns of LWH

• LWH are common around the world
  • ~30% of global workers work >40 hours per week
  • ~22% of global workers work >48 hours per week

• Immigrant workers are at increased odds of adverse employment conditions, including LWH
  • Patterns of work hours vary between male and female immigrants

• Varying definitions of LWH complicate comparisons across studies
To compare the prevalence of LWH with self-reported general health (SRGH) by immigrant status in a cohort of Latin American immigrant and native-born workers in Spain
The PELFI project:

- Multicentric prospective cohort
- Families from Ecuador, Colombia, Morocco and Spain
- Residing in Spain (Alicante and Barcelona)
- Convenience sample (n= 250 families)

Timeline:
- May 2015: Baseline field work
- June 2016: First follow-up
- April 2017: Second follow-up
Study population

- Data were from **baseline field work** (May 2015)

- For this study **workers** were selected:
  - Born in Ecuador
  - Born in Colombia
  - **Spanish-born** (n=89)

- Latin American-born (n=217)
Exposure and outcome of interest

Explanatory:

- **Weekly working hours**: continuous measure

- Recoded in two ways for **Long Working Hours**:
  1. Extended hours $\rightarrow >40h/week$
  2. Excessive hours $\rightarrow >51h/week$

Outcome:

- **Self reported general health (SRGH)**: binary measure
  1. Poor SRGH $\rightarrow$ (very bad+bad+so so)
Covariates of interest

Age:
- Continuous measure

Sex:
- Males
- Females

![Pie charts showing distribution of males and females among Spanish-born (Spain) and Latin American-born (LA) populations.](image-url)
Statistical analysis

• Prevalence was calculated
• Differences between groups were analyzed by chi square tests
• Adjusted odds ratios (ORs) were calculated using binomial logistic regressions with 95% confidence intervals (95%CI)
• Models were stratified by migrant status and sex
Prevalence of LWH and poor SRGH in Latin American-born and Spanish-born workers in Spain

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Spanish-born</td>
<td>LA-born</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>LWH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended hours</td>
<td>7</td>
<td>15.2</td>
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<tr>
<td>Excessive hours</td>
<td>2</td>
<td>4.3</td>
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<tr>
<td>SRGH</td>
<td></td>
<td></td>
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<tr>
<td>Poor SRGH</td>
<td>18</td>
<td>39.1</td>
</tr>
</tbody>
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Test Chi2 was >0.05 in all cases

PELFI, 2015
## Adjusted odds of poor SRGH in Latin American-born and Spanish-born workers in Spain

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Spanish-born</td>
<td>LA-born</td>
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<tr>
<td>OR (95%CI)</td>
<td>OR (95%CI)</td>
<td>OR (95%CI)</td>
</tr>
<tr>
<td>&gt;40 h/w</td>
<td>Ref.</td>
<td>Ref.</td>
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<tr>
<td>Extended hours</td>
<td>1.28 (0.24-6.64)</td>
<td>0.96 (0.37-2.49)</td>
</tr>
<tr>
<td>&gt;50 h/w</td>
<td>Ref.</td>
<td>Ref.</td>
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<tr>
<td>Excessive hours</td>
<td>NA</td>
<td>NA</td>
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All models adjusted by age.

PELFI, 2015
Post-exploratory calculations

Youden index used to identify work hours cut point with strongest association with poor SRGH
Statistically optimized cut points suggest risk profiles differ across groups

Estimation of LWH cut point with strongest association with poor SRGH by gender and immigrant status

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<thead>
<tr>
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<tr>
<td></td>
<td>Spanish-born</td>
<td>LA-born</td>
<td>Spanish-born</td>
<td>LA-born</td>
</tr>
<tr>
<td>Empirical optimal cut point</td>
<td>37.5</td>
<td>30.5</td>
<td>41.0</td>
<td>52.0</td>
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<tr>
<td>Sensitivity at cut point</td>
<td>0.50</td>
<td>0.51</td>
<td>0.67</td>
<td>0.16</td>
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<tr>
<td>Specificity at cut point</td>
<td>0.64</td>
<td>0.62</td>
<td>0.64</td>
<td>0.91</td>
</tr>
<tr>
<td>Area under ROC</td>
<td>0.57</td>
<td>0.56</td>
<td>0.65</td>
<td>0.53</td>
</tr>
</tbody>
</table>

PELFI, 2015
Limitations

- Small sample sizes precluded the identification of significant relationships, specially in among Spanish-born participants.
- Participants may have underreported illegal work hours durations.
Conclusions

• Opposite trends by migrant status were observed, though they did not reach the level of significance

• Evidence of LWH as a risk for poor SRGH in Spanish-born workers, but not in LA-born workers

• Comparing nativity groups using a single definition of LWH could be misleading, given the evidence of:
  
  1. A possible healthy immigrant effect in LA-born male workers
  
  2. Highest vulnerability seen among LA-born women workers