PUBLIC POLICY AND HEALTH, FROM ADOLESCENCE TO OLD AGE

The health effects of anti-tobacco, unemployment, and retirement policy

Esteban Calvo, PhD, MsPH
Associate Professor of Public Policy at Universidad Diego Portales
Adjunct Assistant Professor of Epidemiology at Columbia University
Senior Researcher at Robert N. Butler Columbia Aging Center

March 18, 2016
Pontificia Universidad Católica de Chile
Daily circumstances are shaped by multiple public policies

How policies can influence health over the lifecourse and promote healthy aging

Research using large longitudinal datasets, innovative analytic approaches and theories
Overview of three studies

**Anti-tobacco**
- Impact of 2006 anti-tobacco legislation on teen smoking in Chile
  - 319,798 individuals age 12-24, Chile 2000-2011
  - *Bulletin of the WHO* 2015. Feigl DRCLAS, HMVC.

**Unemployment**
- Links between unemployment program and subjective well-being
  - 398,533 individuals age 18+, 95 countries 1981-2009
  - *Social Forces* 2015. Fondecyt-I.

**Retirement**
- Effects of retirement timing on health and lifestyle
  - 9,598 individuals age 50+, United States 1992-2012, replicated globally
Anti-tobacco Legislation in Chile
Introduction

• Big problem in a small country:*
  – Smoking prevalence 40.6%, 2x US, highest SA
  – Second highest teenage smoking rate worldwide 34.2% (2008)
  – Tobacco-related diseases cause 1/5 deaths

• Implementation of FCTC in 2006:
  – 100% smoke-free and 300m sales restriction only in schools
  – Not at universities, bars, restaurants

• Impact of 2006 school ban on teenage smoking?

• Effectiveness of smoking bans in developing world?

Methods

- SENDA data: separate repeated cross-sections
- \( N = 319,798 \) (restricted to school and university age, 98% complete cases)
- Smoking: past 30 days, heavy (15+ days during last month)
- Interrupted time series:
  - Before/after spline
  - Poisson for each group
  - 2-sample \( t \beta_{2a} = \beta_{2b} \)
- Limitations:
  - No individual panel
  - Pseudo control group
  - Self-reported outcomes
• Policy intervention effect on prevalence:
  – 2011: 25.7% HS students smoked (31.1% without reform)
  – 2005-2011: smoking prevalence in HS students declined at 2.9% greater rate per year than in university students

• Caveats:
  – Conservative estimates (groups, controls, weights, survey)
  – No impact on 11-12th graders
  – No impact on heavy smokers
  – Spatially clustered in high SES
Discussion

• 100% smoke-free areas have more impact

• Effectiveness of ban on developing countries

• Go beyond the low hanging fruit:
  – Ban effective in all public spaces
  – Large permanent tax increases
  – New campaigns
  – Cessation programs

• Long-term effects of critical period in addiction?
  – Lung cancer, COPD, expenditures
Unemployment Programs in 95 Countries
Introduction

- Reduction of unemployment is a central goal of public policy
- Awareness of negative consequences since 19th century
- Address consequences through unemployment programs:
  - Often compulsory and administered by the state
  - Not paid as a single lump sum (severance or redundancy)
- Unemployment programs and subjective well-being:
  - Modest attention
  - Mixed correlational findings

<table>
<thead>
<tr>
<th>EXISTING STUDIES</th>
<th>CURRENT STUDY</th>
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<tbody>
<tr>
<td>Europe and the US</td>
<td>95 income-diverse countries</td>
</tr>
<tr>
<td>Benefit generosity or broad typologies</td>
<td>Specific benefit and financing structure</td>
</tr>
<tr>
<td>Unemployed or previously unemployed</td>
<td>Detailed labor force group differences</td>
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ANTI-TOBACCO | UNEMPLOYMENT | RETIREMENT | CONCLUSION
• Availability versus configuration

<table>
<thead>
<tr>
<th>BENEFIT STRUCTURE</th>
<th>FINANCING STRUCTURE</th>
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<tbody>
<tr>
<td>Tenure</td>
<td>Individual contribution</td>
</tr>
<tr>
<td>Duration</td>
<td>Employer contribution</td>
</tr>
<tr>
<td>Universality</td>
<td>Individual share</td>
</tr>
<tr>
<td>Type (flat/variable)</td>
<td>Government contribution</td>
</tr>
</tbody>
</table>

• Heterogeneity:
  – Context: stronger at higher unemployment rates
  – Position: stronger for unemployed
Methods

95 COUNTRIES AT LEVEL 3

277 COUNTRY-YEARS AT LEVEL 2

398,533 RESPONDENTS AT LEVEL 1

Variables:

- Life satisfaction (L1): All things considered, how satisfied are you with your life as a whole these days? (1=completely dissatisfied, 10=completely satisfied)
- Labor force status (L1): unemployed, worker, student, retiree, homemaker
- Unemployment program (L2): availability, benefit, financing
- Unemployment rate (L2): % of the labor force without work
Methods

• 9.76% missing data points:
  – Linear interpolation: level 2, average of ± 1.7 years
  – Single stochastic imputation, chained equations, 3 levels

• Model estimation:
  – Multilevel: three hierarchical levels, fixed and random
  – Sequential: availability, configuration, UR, position, controls

• Limitations:
  – Stable inter-individual differences
  – Outcomes
  – Correlation, not causation
Results

- Availability per se makes no difference
- Configuration makes little difference when UR is low
- At higher UR, configuration matters:
  - Quasi- or universal are better
  - Individual contribution pays off
  - Individual share pays off at decreasing ratio and when burden is low
  - Some government contribution is better
Results

- Additional heterogeneity by individual labor force status
- Unemployed and students more sensitive to benefit
- Unemployed and retirees more sensitive to financing

<table>
<thead>
<tr>
<th></th>
<th>UNEMPLOYED</th>
<th>WORKER</th>
<th>STUDENT</th>
<th>HOMEMAKER</th>
<th>RETIREE</th>
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<tbody>
<tr>
<td>Tenure (&lt;15m)</td>
<td>+-</td>
<td>+-</td>
<td>+</td>
<td>++</td>
<td>-</td>
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<tr>
<td>Duration (&lt;20m)</td>
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<td>+-</td>
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<td>+</td>
<td>+</td>
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<tr>
<td>Quasi/not universal</td>
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<tr>
<td>Fixed benefit</td>
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<td>++</td>
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<td>-</td>
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<tr>
<td>Individual contribution</td>
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<td>Employer contribution</td>
<td>+-</td>
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<td>++</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Individual share (&lt;5%)</td>
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<td>+</td>
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<tr>
<td>Some gov contribution</td>
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Signs indicate significant association. First sign at high UR, second at low UR.
Discussion

• Theory:
  – Unemployment program availability per se doesn’t matter
  – Focus on configuration (benefit and financing)
  – Consider heterogeneity:
    • Context: at higher UR configuration becomes more important
    • Position: financing for retirees, benefit for students
  – Unemployment programs are collective resources that benefit society as a whole, not just unemployed

• Policy/practice:
  – From implementation to specific configuration
  – Spillover effects on individuals other than unemployed
  – Configure for higher UR (intended context, more benefits)
Retirement Timing in the United States
• Retirement transitions are a hot policy issue
• Retirement policy emphasizes income
• Should also aim to preserve health
• Mediators: money, psychosocial, lifestyle, behavior?

Trends in retirement periods and resources\(^1\)

Expenditures by function as a % of GDP\(^2\)

\(^1\) Author’s elaboration based on IMF 1996 and OECD 2011 data.

\(^2\) Author’s elaboration based on CBO 2013 and OCDE 2011.
## WHEN TO RETIRE?

<table>
<thead>
<tr>
<th>WHEN TO RETIRE</th>
<th>THEORETICAL EXPLANATION</th>
<th>FUNCTIONAL RELATIONSHIP</th>
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<tbody>
<tr>
<td>Later</td>
<td>Identity Resources</td>
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<td>Earlier</td>
<td>Stress Risks</td>
<td></td>
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<tr>
<td>Anytime</td>
<td>Genes Personality</td>
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<tr>
<td>On time</td>
<td>Norms Policies</td>
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**Endogeneity and non-linearity**

**Conclusion**
Methods

- N=9,598 (after excluding retired t1 and out LBF not retired)
- Health: functional (0-10), subjective (1-5), mental (0-8)
- Timing: age, retirement status, age*retirement status (RAND)
- MICE: 11.98% data points missing, 20 datasets
- Models: fixed and random, clustering, short/mid/long-term, IV
- Limitations: no duration, wide CI
Retirement timing in the US: methods

**INSTRUMENTAL VARIABLES**
- Early retirement window offer
- Increase in full retirement age

**Timing** → **Health**

**Age distribution of retirement by year of birth***

* Song and Manchester (2008: Figure 7): SSA beneficiary records for males (females show similar pattern, but 50+% retire around 62.

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**ANTI-TOBACCO** | **UNEMPLOYMENT** | **RETIREMENT** | **CONCLUSION**
Results

**FUNCTIONAL**

**SUBJECTIVE**

**MENTAL**

USA

CHILE

MEXICO

**Difference in predicted values**

**Effect of retirement**

**Age**

**Conclusion**
• Retiring too early can be problematic

• Debatable benefits of working beyond expected ages

• Heterogeneous effects:
  – Health outcome (and lifestyle indicator)
  – SES: early is more detrimental to poor and less educated
  – Country, distance to the transition, adjustment processes?
Discussion

• Preliminary steps to unveil causal pathway:
  – Hints on potential mechanisms
  – Little support for lifestyle
  – Age guidelines highlight the role of norms and policies

• Policy/practice:
  – Wait at least until expected ages
  – Raising FRA could damage health (more early retirees)
  – More support for low SES retirees
Conclusion
Conclusion

- Policies implemented in diverse countries and differentially applied to individuals over the lifecourse
- Public policies impact health, from adolescence to old age
- There is no silver bullet or one-size-fits-all policy
- Key factors explaining variation:
  - Lifecourse: age, labor force position
  - Outcome: health, lifestyle, positive, biomarker
  - Structural context: county SES, country UR, culture and institutions
- Craft solutions that work in practice, not just in theory
- More longitudinal and cross-national studies
Research Agenda
Aims:

• Identify and understand the social factors experienced across the lifecourse that influence the health of older adults

• Evaluate public policies and interventions that can improve the health of older adults and benefit society as a whole

Areas:

• Lifecourse antecedents of older adult health

• Macro-social influences on individual health

• Population aging and comparative public policy
Lifecourse antecedents of older adult health

Impact of lifecourse antecedents on health outcomes, from self-reports to biomarkers

- Unit: individuals over time
- Topic: health effects of work, retirement, moving
- Method: quasi-experimental designs

- Multiple funding for cross-national retirement project:
  - Outcomes: cognition, mortality, physical measures, biomarkers
  - Transitions: timing, speed, control, anticipation, synchronicity
  - Trajectories: labor force sequence analysis, cumulative disadvantage
- Long-term: early antecedents of later life health and income
Macro-social influences on individual health

GOAL
How individuals react to social contexts and public policies experienced over the lifecourse

PUBLICATIONS
- Unit: individuals within context
- Topic: SWB and lifestyle in varying contexts (policies, UR)
- Method: cross-national multilevel analyses

PROJECTS
- Multilevel: violence, stereotypes, age
- Teenage smoking: geospatial and long-term impact
- Contextual effects on cognition and functioning (UE and NIH)
- Long-term: health in HRS sister surveys
Population aging and comparative public policy

**Goal:**
Understand challenges and opportunities posed by demographic change to policy throughout the world

**Publications:**
- Unit: changes within and between countries
- Topic: social security and health policy, measurement of WB
- Method: comparative-historical approach

**Projects:**
- Policy enactment and diffusion of ideas (IRA, AUGE)
- From drawing WB to survey drawing (FONDEF)
- Long-term: back to health effects and inequality