A COMPARISON OF SUBJECTIVE WELL-BEING AND GENERIC PREFERENCE-BASED MEASURES OF HEALTH

evidence from the BHPS

Chris Sampson
Plan

- Introduction
- Literature
  - Potential differences
- Methods
  - Determinants
  - Responsiveness
- Results
- Discussion
Introduction

- EQ-5D + TTO = QALY
  - Lots of problems
- Alternative?
  - Capabilities
  - Subjective well-being
    - Happiness?
Introduction

- What is subjective well-being?
  - Happiness
  - Quality of life
  - Satisfaction with life

- Is it appropriate in health care?
  - Why not?
    - Extra-welfarism?

- Policy implications of its use
  - Are there any?
Literature

- Debate for/against its use
  - Belief that it would give different results
    - Would it?
- 3 reasons for potential difference
  - What is valued
  - How it is valued
  - Who values it
Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

Literature

- What is valued
  - Current
    - HRQoL
      - Pain / physical limitations / psychiatric concerns
  - SWB
    - QoL
      - Freedom? / strength of relationships? / achievement?
    - Wider impacts
      - Health of others
Literature

- How it is valued
  - Current
    - Expected utility
    - Fixed time dimension
    - Focusing
  - SWB
    - Experienced utility
    - Lifetime perspective
      - Consideration of past and future states
    - No focusing
Literature

- Who values it
  - Current
    - Public preferences
  - SWB
    - Individual experience
Literature

- No real difference
  - Much overlap between HRQoL and QoL
    - Role functioning in SF-6D
    - Happiness/depression
    - Double-counting?
Methods

- Data
  - British Household Panel Survey
  - 15,000 individuals
  - Waves 6-10, 12-18 include:

  "How dissatisfied or satisfied are you with your life overall?"
Methods

- Data
  - No EQ-5D
  - Waves 9 and 14 include SF-36
  - Convert to SF-6D
    - Very similar to EQ-5D
Methods

- Determinants of SWL / SF-6D
  - Cross-sectional (wave 14)
  - SWL: ordered probit
  - SF-6D: tobit
Methods

- Responsiveness of SWL
  - Difference-in-difference analysis
    - 2 time points
    - Waves 9 and 14
    - 16 health problems
Results
Results

Mean SF-6D

SWL score
Results
Results
## Determinants of SWL and SF-6D

<table>
<thead>
<tr>
<th>Variable</th>
<th>SWL: (Ordered Probit)</th>
<th>SF-6D (Tobit)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>Coefficients</td>
</tr>
<tr>
<td>Age</td>
<td>-0.0209724 ***</td>
<td>0.0010369 ***</td>
</tr>
<tr>
<td>Age squared</td>
<td>0.000303 ***</td>
<td>-0.0000118 ***</td>
</tr>
<tr>
<td>Female</td>
<td>-0.0015744</td>
<td>-0.0246922 ***</td>
</tr>
<tr>
<td>Black</td>
<td>-0.3158258 **</td>
<td>-0.0156654</td>
</tr>
<tr>
<td>Non-white</td>
<td>-0.3344164 ***</td>
<td>-0.0244945 ***</td>
</tr>
<tr>
<td>Married</td>
<td>0.2607632 ***</td>
<td>0.0077681 ***</td>
</tr>
<tr>
<td>No. of children</td>
<td>-0.0698071 ***</td>
<td>-0.0026101 **</td>
</tr>
<tr>
<td>Degree</td>
<td>-0.0720093 ***</td>
<td>0.0038577 *</td>
</tr>
<tr>
<td>Income</td>
<td>0.0000305 **</td>
<td>3.79E-06 ***</td>
</tr>
<tr>
<td>Log of Income</td>
<td>-0.0333274 *</td>
<td>-0.002729</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-0.2902574 ***</td>
<td>-0.0094307</td>
</tr>
<tr>
<td>No. of work hours</td>
<td>-0.0028616 ***</td>
<td>0.0003075 ***</td>
</tr>
<tr>
<td>Religious activity</td>
<td>0.0832578 ***</td>
<td>0.0009713</td>
</tr>
<tr>
<td>Carer</td>
<td>-0.2072834 ***</td>
<td>-0.0101299 ***</td>
</tr>
<tr>
<td>Expected health</td>
<td>-0.1699588 ***</td>
<td>-0.0184789 ***</td>
</tr>
</tbody>
</table>
## Results

### Determinants of SWL and SF-6D

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<th>Variable</th>
<th>SWL: (Ordered Probit)</th>
<th>SF-6D (Tobit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>-0.33362***</td>
<td>-0.09392***</td>
</tr>
<tr>
<td>Arms / legs / hands</td>
<td>-0.12793***</td>
<td>-0.07301***</td>
</tr>
<tr>
<td>Sight</td>
<td>-0.01136</td>
<td>-0.01255***</td>
</tr>
<tr>
<td>Hearing</td>
<td>-0.03852</td>
<td>-0.00178</td>
</tr>
<tr>
<td>Skin</td>
<td>-0.05384*</td>
<td>-0.00593**</td>
</tr>
<tr>
<td>Chest</td>
<td>-0.08234***</td>
<td>-0.03463***</td>
</tr>
<tr>
<td>Heart</td>
<td>-0.09558***</td>
<td>-0.01987***</td>
</tr>
<tr>
<td>Stomach</td>
<td>-0.18799***</td>
<td>-0.03867***</td>
</tr>
<tr>
<td>Diabetes</td>
<td>0.060795</td>
<td>-0.00476</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.75851***</td>
<td>-0.09898***</td>
</tr>
<tr>
<td>Drugs</td>
<td>-0.40845***</td>
<td>-0.03078**</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>-0.07141</td>
<td>-0.01177</td>
</tr>
<tr>
<td>Migraine</td>
<td>-0.10754***</td>
<td>-0.02929***</td>
</tr>
<tr>
<td>Cancer</td>
<td>-0.05011</td>
<td>-0.0244***</td>
</tr>
<tr>
<td>Stroke</td>
<td>-0.21596**</td>
<td>-0.01375*</td>
</tr>
<tr>
<td>Other health problems</td>
<td>-0.19852***</td>
<td>-0.03209***</td>
</tr>
<tr>
<td>_Constant</td>
<td>0.885954***</td>
<td></td>
</tr>
</tbody>
</table>
## Results

### Effect of having a health problem

<table>
<thead>
<tr>
<th>Health problem</th>
<th>SWL</th>
<th>SF-6D</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (SWL=6)</td>
<td>19.68%</td>
<td>0.863</td>
</tr>
<tr>
<td>Disabled</td>
<td>11.77%</td>
<td>0.769</td>
</tr>
<tr>
<td>Arms / legs / hands</td>
<td>16.33%</td>
<td>0.79</td>
</tr>
<tr>
<td>Sight</td>
<td></td>
<td>0.851</td>
</tr>
<tr>
<td>Skin</td>
<td>18.22%</td>
<td>0.857</td>
</tr>
<tr>
<td>Chest</td>
<td>17.48%</td>
<td>0.828</td>
</tr>
<tr>
<td>Heart</td>
<td>17.14%</td>
<td>0.843</td>
</tr>
<tr>
<td>Stomach</td>
<td>14.89%</td>
<td>0.824</td>
</tr>
<tr>
<td>Anxiety</td>
<td>5.35%</td>
<td>0.764</td>
</tr>
<tr>
<td>Drugs</td>
<td>10.36%</td>
<td>0.832</td>
</tr>
<tr>
<td>Migraine</td>
<td>16.84%</td>
<td>0.834</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
<td>0.839</td>
</tr>
<tr>
<td>Stroke</td>
<td>14.25%</td>
<td>0.849</td>
</tr>
<tr>
<td>Other health problems</td>
<td>14.65%</td>
<td>0.831</td>
</tr>
</tbody>
</table>
Results

- Responsiveness to changes in health
- Difference-in-difference
  - Between those who are, and those who are not, diagnosed with a particular health problem between wave 9 and wave 14
Results

Proportional difference-in-difference

-0.15 -0.10 -0.05 0 0.05 0.10 0.15 0.20 0.25

armsl  sight  hearing  skin  chest  heart  stomach  diabetes  anxiety  drugs  epilepsy  migraine  other  disabled

-0.15 -0.10 -0.05 0 0.05 0.10 0.15

PropSF6D  PropSWL
Discussion

- Limited evidence supporting literature
  - SWL and SF-6D give surprisingly similar results

- What is valued
  - Some expected differences but mainly conversion

- How it is valued
  - Time dynamic
  - Focusing effects?

- Who values it
  - Possibly most important...
Discussion

- Responsiveness of SWL
  - Impressive
  - SWL responds to changes in health to similar extent to SF-6D
Discussion

- Policy implications
- SWB could be used to evaluate health interventions
- Greater weight to mental health, drug/alcohol problems and skin problems
- Reduced weight to physical problems, diabetes and hearing
Discussion

- Study limitations
  - Tons
  - D-i-D limited
    - P-score matching?
  - Only 2 waves
  - Other health problems?
  - Effect of personality?
  - Effect of focusing?
My two cents

- SWB seems like a good alternative
  - QoL a more useful outcome
  - Removes limitations of expected utility
  - Patient preferences best
  - Less demanding methodology
    - Better response rates in patient populations
References

References

Questions?