Social determinants of health-related quality of life

Francis Guillemin, Joelle Kivits

EA 4360 Apemac, Inserm CIC-EC
Université de Lorraine, CHU de Nancy
Health-Related Quality of Life

- WHO (1993) defines quality of life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's condition and its relationship to salient features of its environment.

- In the field of health and healthcare, this definition is restricted to health domains mainly covering physical health, psychological state, and social relationships of the individual.
Health-Related Quality of Life

- HRQoL measures
  - the perspective and experience of the subject
  - consequences of his/her health condition
- Like pain symptoms, measurement by an observer is not relevant
  => Subjective health, perception by the individual
  - Self-assessment or by an interviewer
  - Measurement using self-report standardized questionnaire
- Multidimensional in composite scores: physical, mental, social
- This endpoint can be assessed and monitored all along life span
  => People may adjust to various situations
Measurement and indicators

- Duke Health Profile
  - 10 dimensions
  - Score 0=worse to 100= best quality of life

- SF-36
  - 8 dimensions into 2 components summary
  - Score 0=worse to 100= best quality of life
  - Interpretation: minimum important difference at least 5 points
Investigating social determinants

- General population surveys
  - Baromètre Santé 2005 (INPES)
    - Random sample of households and individuals (phone)
    - N=16326 individuals
    - Adults 18 to 75 years
    - Duke Health Profile
  - Enquête décennale Santé 2002-03 (Insee)
    - Random sample of households (home visits)
    - N=20574 individuals
    - Adults 18 years and over
    - SF-36
<table>
<thead>
<tr>
<th>Duke Health Profile</th>
<th>mean</th>
<th>Female (compared to male)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>71.7</td>
<td>-7.94</td>
</tr>
<tr>
<td>Mental</td>
<td>75.1</td>
<td>-6.69</td>
</tr>
<tr>
<td>Social</td>
<td>66.7</td>
<td>1.58</td>
</tr>
<tr>
<td>General</td>
<td>71.2</td>
<td>-4.34</td>
</tr>
<tr>
<td>Perceived health</td>
<td>71.4</td>
<td>-1.18</td>
</tr>
<tr>
<td>Self esteem</td>
<td>77.0</td>
<td>-2.85</td>
</tr>
<tr>
<td>Anxiety</td>
<td>69.2</td>
<td>-5.03</td>
</tr>
<tr>
<td>Depression</td>
<td>72.9</td>
<td>-6.96</td>
</tr>
<tr>
<td>Pain</td>
<td>64.7</td>
<td>-7.82</td>
</tr>
</tbody>
</table>
Baromètre Santé 2005: age
Décennale Santé: overall and gender

<table>
<thead>
<tr>
<th>SF 36</th>
<th>mean</th>
<th>Female (compared to male)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical functioning</td>
<td>85.3</td>
<td>-3.23</td>
</tr>
<tr>
<td>Role physical</td>
<td>82.2</td>
<td>-2.30</td>
</tr>
<tr>
<td>Bodily pain</td>
<td>73.0</td>
<td>-4.83</td>
</tr>
<tr>
<td>Mental health</td>
<td>66.7</td>
<td>-4.95</td>
</tr>
<tr>
<td>Role mental</td>
<td>82.0</td>
<td>-4.08</td>
</tr>
<tr>
<td>Social functioning</td>
<td>80.9</td>
<td>-3.74</td>
</tr>
<tr>
<td>Vitality</td>
<td>57.4</td>
<td>-4.44</td>
</tr>
<tr>
<td>General health</td>
<td>67.8</td>
<td>-1.07</td>
</tr>
<tr>
<td>Physical component summary</td>
<td>50.4</td>
<td>-0.72</td>
</tr>
<tr>
<td>Mental component summary</td>
<td>48.8</td>
<td>-2.28</td>
</tr>
</tbody>
</table>
Baromètre Santé 2005: level of education
Baromètre Santé 2005: occupational status
Baromètre Santé 2005: income

Net monthly income per household

HRQoL

< 230€ (n=226)
[230€ - 380€] (n=333)
[380€ - 600€] (n=1111)
[600€ - 1000€] (n=3235)
[1000€ - 1200€] (n=2008)
[1200€ - 1500€] (n=2082)
[1500€ - 2000€] (n=2477)
[2000€ - 2400€] (n=592)
[2400€ - 3000€] (n=1204)
[3000€ - 4500€] (n=632)
[4500€ - 7600€] (n=119)
[7600€ -] (n=14)

Revenus mensuels nets par UC

Qualité de vie

score - physique
score - mental
score - social
score - general
score - percu

score - estime de soi
score - anxiete
score - depression
score - incapacite

Perceived health

Physical
Mental
Social
General
Self esteem
Anxiety
Depression
Disability

Net monthly income per household

< 230€ (n=226)
[230€ - 380€] (n=333)
[380€ - 600€] (n=1111)
[600€ - 1000€] (n=3235)
[1000€ - 1200€] (n=2008)
[1200€ - 1500€] (n=2082)
[1500€ - 2000€] (n=2477)
[2000€ - 2400€] (n=592)
[2400€ - 3000€] (n=1204)
[3000€ - 4500€] (n=632)
[4500€ - 7600€] (n=119)
[7600€ -] (n=14)
Baromètre Santé 2005: social indicators

<table>
<thead>
<tr>
<th>Duke Health Profile dimensions*</th>
<th>Physical</th>
<th>Mental</th>
<th>Social</th>
<th>Perceived health</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living in couple</td>
<td>70.6%</td>
<td>2</td>
<td>4.4</td>
<td>5.3</td>
<td>--</td>
</tr>
</tbody>
</table>

**Level of education**

- > 2 years university: 19.7%
- 2 years university: 12.8%
- High school: 18.7%
- College: 40.8%
- No diploma: 8.0%

**Occupational status**

- Employed: 59.0%
- Unemployed: 7.4%
- Inactive: 33.6%

**Income**

- < 230€: 23.3%

**Chronic condition**

* Multivariate linear regression models adjusted on age and sex
Décennale Santé: level of education

![Graph showing physical functioning, role physical, bodily pain, mental health, role mental, vitality, general health, physical component summary for different levels of education: > 2 years university, 2 years university, high school, college, and no diploma.](image)
Décennale Santé: occupational status

![Graph showing the comparison of different health domains (Physical functioning, Role physical, Bodily pain, Mental health, Role mental, Social functioning, Vitality, General health, Physical component summary, Mental component summary) across different occupational statuses (Employed, Unemployed, Inactive).](image-url)
Décennale Santé: income

Graphique montrant les scores de qualité de vie (Échelle de qualité de vie de 50 à 100 points – score HT non représenté) en fonction du revenu mensuel net par UC.
### Décennale Santé: social indicators

<table>
<thead>
<tr>
<th></th>
<th>SF36 *</th>
<th>Physical component summary</th>
<th>Mental component summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Living in couple</strong></td>
<td>71.6%</td>
<td>--</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 2 years university</td>
<td>12.5%</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>2 years university</td>
<td>13.6%</td>
<td>-0.4</td>
<td>--</td>
</tr>
<tr>
<td>High school</td>
<td>17.0%</td>
<td>-0.2</td>
<td>--</td>
</tr>
<tr>
<td>College</td>
<td>43.0%</td>
<td>-1.3</td>
<td>--</td>
</tr>
<tr>
<td>No diploma</td>
<td>13.9%</td>
<td>-3.1</td>
<td>--</td>
</tr>
<tr>
<td><strong>Occupational status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>58.7%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6.1%</td>
<td>-0.4</td>
<td>-1.5</td>
</tr>
<tr>
<td>Inactive</td>
<td>35.2%</td>
<td>-1.2</td>
<td>-0.8</td>
</tr>
<tr>
<td><strong>Income per household</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 230€</td>
<td></td>
<td>-2.9</td>
<td>-0.8</td>
</tr>
<tr>
<td><strong>Chronic condition</strong></td>
<td>40.0%</td>
<td>-4</td>
<td>-3.1</td>
</tr>
</tbody>
</table>

* Multivariate linear regression models adjusted on age and sex
Discussion (1)

- **Social determinants of HRQoL: why is it important?**
  - We know that
    - health perception impacts on health care recourse
  - Data
    - show the existence of social determinants in HRQoL
    - indicate that social environment – *as being understood through social determinants’ lens* – impacts on health perception
    - questions the role of social environment in health perception and health-related quality of life

  => *Can we identify social mechanisms governing the impact of social determinants on HRQoL?*
Discussion (2)

- Exploring social mechanisms governing the impact of social determinants in HRQoL implies

1. a pluridisciplinary approach
   - Epidemiology, through HRQoL instruments, studies a part of health perception
   - Psychology examines how chronically ill individuals adapt to their social environment
   - Sociology highlights the social environment of individuals’ life

2. a multilevel approach of health perception
   - Population health status
   - Social environment
   - Individual situations
Discussion (3)

3. **an individual – structural** approach, mobilizing the concept of agency
   
   “the ability for people to deploy a range of causal powers... the ability to produce an effect” (Frolich et al. 2001, 2002)
   
   “make a difference to a pre-existing state of affairs or course of events” (Giddens, 1984)
   
   □ In public health, an agent is an individual engaging with social environment
   
   □ Linking individual and structural components of health
   
   □ Considers structural roots of social determinants
Conclusion

- Social determinants of HRQoL highlights health inequalities
  - in subjective health assessment
  - in social environment

- Place of monitoring HRQoL in addressing health inequalities?
  - Health perception can be measured over life span
    => HRQoL may become an inequality indicator
  - HRQoL allows measuring effect of social intervention
    / of public health intervention on social determinants
Acknowledgments

- INPES: Baromètre Santé 2005
- Insee: Enquête Décennale Santé 2002-03

Marie-Line Erpelding, biostatistician (Inserm CIC-EC)