Chronic Diseases and Employment: Impact on Social Inequalities

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Burden of Chronic Disease and Risk Factors

- **Epidemiological burden**
  - Responsible for most of the disease and deaths throughout the world
  - In high income countries *(Source: WHO 2008)*
    - 87% of deaths
    - 86% of DALYs (i.e., lost years of "healthy" life)
      - Neuropsychiatric disorders 31%
      - Cardiovascular diseases 17%
      - Cancers 17%
    - Rising burden on poor and young/middle-aged populations
      - 60% of all DALYs attributable to chronic diseases lost before age 60 years

- **Social and economic burden**
  - On individuals and households
    - Workforce participation and labour productivity
    - Household financial situation
  - On national health and welfare systems and economic growth
Social Inequalities in Health
Two major underlying pathways

Diderichsen’s model of the social production of disease

Source: Diderichsen 2001
Chronic Disease and Employment
Current context

- Consequences of chronic disease on employment may play a substantial role in the process of social health inequalities in the current context
  - Increasing numbers of people affected by a chronic disease among the working aged population
    - Increasing numbers of people affected by a chronic disease overall
      - Population ageing
      - Improvements in diagnosis
      - Therapeutic advances
    - Decreasing age at onset of cardiovascular risk factors
    - Raising age at retirement
  - Increasing rates of health-related work disability
    - 6% of the working aged population in Europe (Source: OECD 2010)
    - Major contribution of chronic disease
Chronic Disease and Employment
State of knowledge (1)

- **Consequences of chronic disease and risk factors on employment**
  - Evidence of an association between the presence of various chronic conditions and
    - Decreased workforce participation
    - Early retirement
    - Work limitations
    - Sickness absence from work
    - Low access/return to work
  - Unanswered questions
    - Causal linkages?
    - Underlying pathways?
Differential in employment rates* between the French general population and people living with HIV infection in France in 2003 (ANRS-VESPA Study)

* Adjusted for age, gender, citizenship, and education using direct standardization

# Impact of Diabetes on Early Work Cessation in the GAZEL Cohort Study

## Risks of disability, retirement and death in working aged (<60 years) participants with vs. without diabetes

<table>
<thead>
<tr>
<th>Transition from employment to...</th>
<th>Participants With Diabetes (N=506)</th>
<th>Participants Without Diabetes* (N=2530)</th>
<th>Hazard Ratio** [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability</td>
<td>15  7.9</td>
<td>162  2.7</td>
<td>1.7 [1.0 ; 2.9]</td>
</tr>
<tr>
<td>Retirement</td>
<td>399  209.1</td>
<td>2221  37.6</td>
<td>1.6 [1.5 ; 1.8]</td>
</tr>
<tr>
<td>Death</td>
<td>13  6.8</td>
<td>22  0.4</td>
<td>7.3 [3.6 ; 14.6]</td>
</tr>
</tbody>
</table>

* Matched for sex + year, age and occupational grade at hiring
** Multistate Cox model

*Herquelot et al, Diabetes Care 2011*
Impact of Diabetes on Sickness Absence from Work in the GAZEL Cohort Study

Estimated numbers of sickness absence days over time among the 506 participants with diabetes (−) and the 2530 without (−) diabetes

* Linear mixed-effects models adjusted for sex + year, age and occup. grade at hiring

Dray-Spira et al, Diabetic Medicine (Accepted)
Chronic Disease and Employment
State of knowledge (2)

- Social inequalities in the employment consequences of chronic disease and risk factors
  - Data from the general population
    - Evidence of social differences in the consequences of ill health ("limiting longstanding illness") on labour market outcomes
    - Major role of
      - Labor market policies
      - Social protection system
      - Economic recession
  - Limited data focusing on specific health conditions
    - Essential to investigate underlying mechanisms of these inequalities
    - Role of
      - the nature of the health problem and/or its management?
      - characteristics of the healthcare system?
Inequalities in the Impact of Obesity on Employment

Impact of obesity at age 50 years on early retirement among participants of the GAZEL Cohort, by occupational grade

Impact of obesity at age 50 years on early retirement among participants of the GAZEL Cohort, by occupational grade

Hazard Ratio*:

- Normal BMI, High occup. grade
- Obese, High occup. grade
- Normal BMI, Low occup. grade
- Obese, Low occup. grade

* Multistate Cox model adjusted for sex, characteristics at hiring (age, year and occupational grade) and comorbidities

Dray-Spira et al, ADELF 2012
Inequalities in the Impact of HIV infection on Employment (1)

HIV disease severity and the risk of work cessation over time since HIV diagnosis, by sex (ANRS-VESPA Study; N=478)

* Cox model adjusted for characteristics at HIV diagnosis (age, geographic origin, education, occup. grade and employment status) and seld-reported experience of HIV-related discriminations

Dray-Spira et al, Occup Environ Med 2008
Self-reported experience of discrimination and the risk of work cessation over time since HIV diagnosis, by education (ANRS-VESPA Study; N=478)

* Cox model adjusted for characteristics at HIV diagnosis (age, gender, geographic origin, occup. grade and employment status) and HIV disease severity

Dray-Spira et al, Occup Environ Med 2008
Chronic Disease and Employment
Further questions

- Pathways underlying employment consequences of chronic conditions and their socially differentiated nature?
  - Respective role of
    - Individual characteristics
      - Occupational factors
      - Health status
      - Health behaviors and lifestyle
      - Psychosocial factors
    - Chronic condition specificities
      - Prognosis
      - Treatment and care
      - Associated stigma and discrimination
    - Macrosocial context
      - Access to healthcare
      - Labor market policies
      - Social protection system
      - Economic recession
At the healthcare level

- New models of healthcare delivery to achieve more integrated and comprehensive services (integrated care models)
  - Implication of both health and social workers
  - Inclusion of work rehabilitation programs

Beyond healthcare

- Social and economic policies to reduce the structural causes of social inequalities
- Employment policy
  - Active labour market policy
  - Employment protection
- Health promotion
  - Efforts to tackle stigma and discrimination
Conclusions

- Critical field of research for the comprehension and the reduction of social health inequalities

- Major contribution of epidemiology
  - Diversity and complementarity of methods
  - Detailed information both on health status and social aspects

- In France, implementation of several large cohorts ("Grand Emprunt" funding) constitutes a major opportunity to investigate this field