



Changes in prevalence and disabling effects of diseases in the older Dutch population between 1987 and 2001

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Research



Background

- Studies from other countries show an *increase* in the prevalence of chronic diseases and a *decrease* in the prevalence of disability
- Studies have shown changes in disabling effects of chronic diseases
- Possible explanations:
 - Early diagnosis of diseases → prevalence of disease increases, disabilities do not increase
 - Diseases are less disabling (due to better medical care and use of assistive devices) → prevalence of diseases does not increase, disabilities decrease



Objectives

- To examine changes in the prevalence of chronic diseases and disability in persons aged 55 and over between 1987 and 2001 in the Netherlands
- To examine whether the association between chronic diseases (GP registered and self-report) and disability has changed in the Netherlands between 1987 and 2001



Study Sample

- Dutch National Survey of General Practice
 - First in 1987
 - Second in 2001
- 103 (1987) and 104 (2001) general practices, all *listed* patients
- 5% of listed patients (18+) received questionnaire
 - 10,127 in 1987 (response 76%)
 - 9,685 in 2001 (response 65%)
- In our analyses, patients of 55 years and older are selected
 - 2,708 in 1987
 - 3,474 in 2001



Measurement of disability

Mobility disability

- ✓ Carrying a bag of 5 kg for 400 metres
- ✓ Climbing a staircase
- ✓ Lifting an object while standing
- ✓ Walking 400 meters

ADL disability

- ✓ Transfer to another room on the same floor
- ✓ Get in and out of bed
- ✓ Dress and undress oneself

All items dichotomized into: difficulty – no difficulty

Difficulty = much difficulty or not able to perform ≥ 1 item



Measurement of disease

Self-report disease

- Diabetes mellitus
- Cardiac disease
- Asthma/COPD
- Low back complaints

GP diagnoses

- Diabetes mellitus
- Cardiac disease
- Cardiac arrhythmia's
- Stroke
- Rheumatoid arthritis
- Osteoarthritis of hip or knee
- Asthma/COPD
- Low back complaints
- Depression
- Anxiety



Statistical analysis (1)

RQ1 Examine differences in the prevalence of diseases and disabilities between 1987 and 2001

- ✓ Both populations standardized according to Dutch population of 2001
- ✓ Logistic regression analyses with year of study as independent variable, adjusted for age, educational attainment and number of face-to-face contacts (for GP-registered diseases only)
- ✓ Differences between men and women tested with an interaction term $\text{year of study} * \text{sex}$
- ✓ Dependent variable chronic disease respectively disability



Statistical analysis (2)

RQ2: Examine whether the association between chronic diseases (GP registered and self-report) and disability has changed between 1987 and 2001.

- ✓ Logistic regression analyses
- ✓ Dependent variable: disability
- ✓ Independent variables: diseases
- ✓ Interaction term: disease*year of study
- ✓ Adjusted for age, sex, education and comorbidity



Study sample (1)

	1987 % N=2708	2001 % N=3474
Men	46.4	46.4
Women	53.6	53.6
55-74 years	76.4	76.4
75+	23.6	23.6
Low education#	51.5	28.2 *
Intermediate education#	41.0	57.2
High education#	7.5	14.7

Low education=none or primary school, middle=secondary school or lower or middle vocational education, high=high vocational education or university

p<0.05



Study sample (2)

Self-reported disease and disability	1987 % N=2708	2001 % N=3474
Diabetes	6.1	9.0*
Cardiac Disease	16.5	13.0*
Low back complaints	20.4	16.7*
Asthma/COPD	12.1	9.3*
Percentage ≥ 1 disease	42.6	38.0*
Mobility limitations	42.9	25.7*
ADL disability	8.0	3.4*

$p < 0.05$



Study sample (3)

GP diagnosed disease	1987 % N=2708	2001 % N=3474
Diabetes	2.9	4.2*
Cardiac Disease	4.9	3.3*
Low back complaints	2.2	2.1
Asthma/COPD	3.6	1.8*
Percentage ≥ 1 disease	16.9	13.5*



Change in prevalence (RQ1)

Self-reported disease and disability	Men OR (95%CI)	Women OR (95%CI)
Diabetes	2.22 (1.60-3.09)*	1.48 (1.14-1.91)*
Cardiac Disease	1.02 (0.83-1.26)*	0.62 (0.50-0.78)*
Low back complaints	0.72 (0.59-0.88)	0.86 (0.72-1.02)
Asthma/COPD	0.55 (0.43-0.70)*	1.22 (0.95-1.56)*
Mobility limitations	0.38 (0.31-0.46)*	0.58 (0.49-0.67)*
ADL disability	0.39 (0.25-0.61)	0.44 (0.32-0.59)

* = significantly different between men and women



Change in disabling effects (RQ2)

	Mobility 1987	Mobility 2001	ADL 1987	ADL 2001
Diabetes	1.64 (1.2-2.4)	1.80 (1.4-2.4)	1.54 (0.9-2.5)	1.33 (0.8-2.3)
Cardiac disease	2.92 (2.3-3.7)*	1.88 (1.5-2.4)*	2.24 (1.6-3.2)	1.50 (0.9-2.4)
Low Back complaints	3.45 (2.8-4.3)*	4.64 (3.8-5.7)*	2.44 (1.8-3.4)*	4.71 (3.2-7.0)*
Asthma/COPD	3.13 (2.4-4.1)*	1.97 (1.5-2.6)*	2.20 (1.50-3.3)	2.4 (1.5-3.7)

* = significantly different between 1987 and 2001



Conclusions (1)

- Decrease in prevalence of all diseases except diabetes mellitus (increase)
- The change in prevalence of the diseases were similar for GP registered and self-reported diseases (results not shown)
- Decrease in prevalence of mobility disability and ADL disability



Conclusions (2)

- The disabling effects of the diseases show different results for different diseases:
 - fatal diseases such as cardiac diseases, asthma/COPD became *less* disabling
 - non-fatal diseases such as low back complaints and osteoarthritis became *more* disabling
 - for the other diseases no change in disabling effect



Strengths and limitations (1)

- Low prevalence of doctor-diagnosed disease limited the power of the analyses
- Questionnaires for disability and disease were not identical in 1987 and 2001, some misclassification might be present in our data
- It was not possible to distinguish disability according to severity. The decrease we found in (severe) disability might be accompanied with an increase in mild disability



Strengths and limitations (2)

- Both the first and second Dutch National Survey of General Practice are representative of general practice in the Netherlands
- Both doctor-diagnosed and self-reported disease show similar trends



Questions?



Thank you for your attention!