



# Mortality among disability pensioners

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# Outline

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- Data
- Disability in Norway
- Methods used
- Results
- Summary



# Motivation



- From an insurer's point of view:
  - Handle adverse selection in portfolios.
  - Make correct provisions for future payments.
  - Could be dealt with by separating between different causes of disability.

# Motivation



- Political and governmental interest:
  - An increased number of disability pensioners compared to the demographic development.
  - Use mortality as a measure for health condition of the disability pensioners.
  - Reflection of the consequences of becoming a disability pensioner.

# Disability in Norway



- The Norwegian Social Insurance Scheme provides all Norwegian residents with a disability benefit when working capacity is reduced by 50 percent or more.
- From January 1st 2004 disability benefits in Norway were split into time-limited disability benefit and disability pension. Only disability pension data is considered in this study.

# Data



- The data used for the analyses are provided by Statistics Norway and the Norwegian Labour and Welfare Service.
- The data covers the total number of disability pensioners and the total population of Norway in the period between 1992 and 2006.
- Follow groups of individuals between 18 and 67 for a time-span of 15 years.

# Data



- The causes of disability considered are musculoskeletal diseases, psychiatric disorders and a group of disability pensioners disabled due to other causes.
- The grouping is approximately of equal size.

# Methods

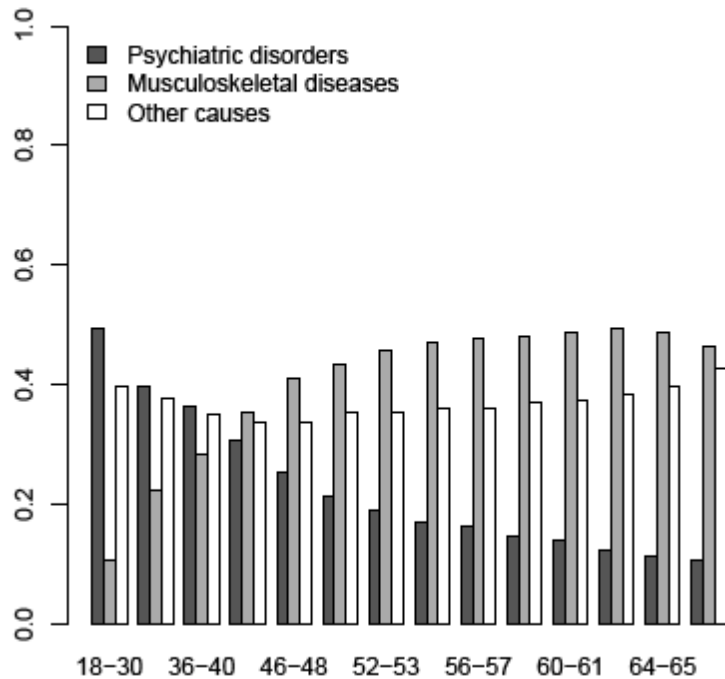


- Generalized linear model with Poisson distributed response variables.
- Age is used as main explanatory variable.
- Stratified analysis for both gender and cause of disability.

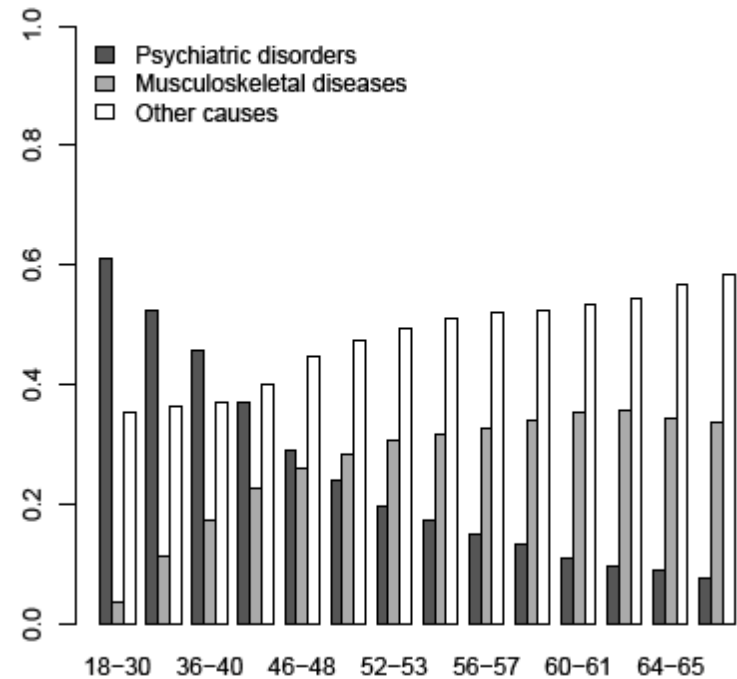
# New retirements



Granting of DP to women between 18 and 67 years



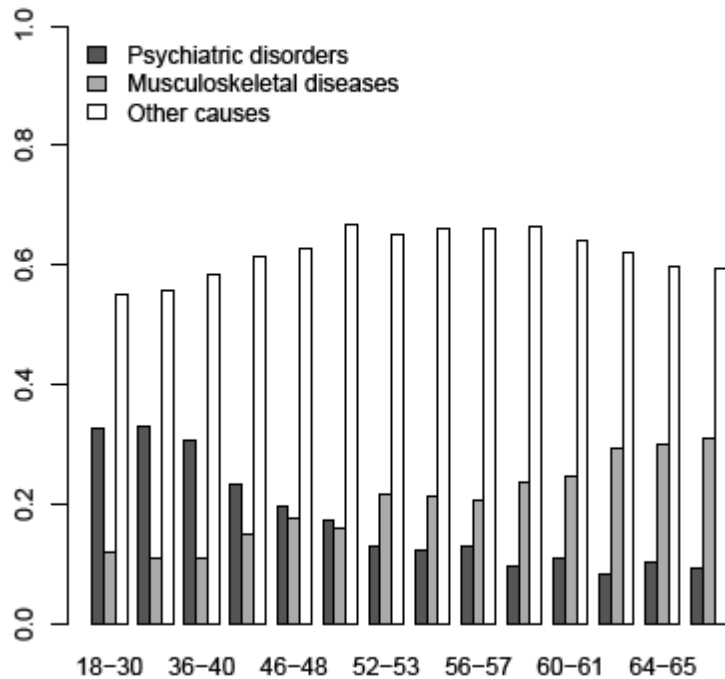
Granting of DP to men between 18 and 67 years



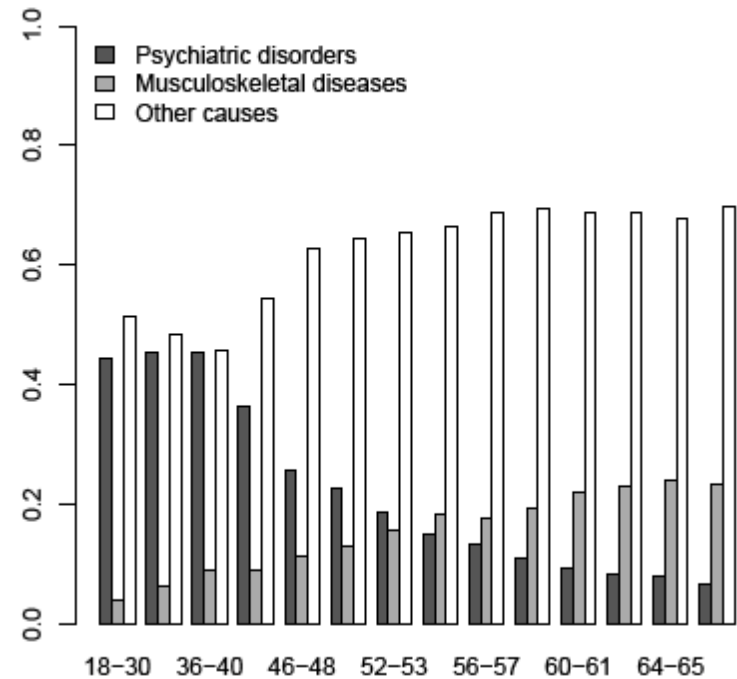
# Deaths



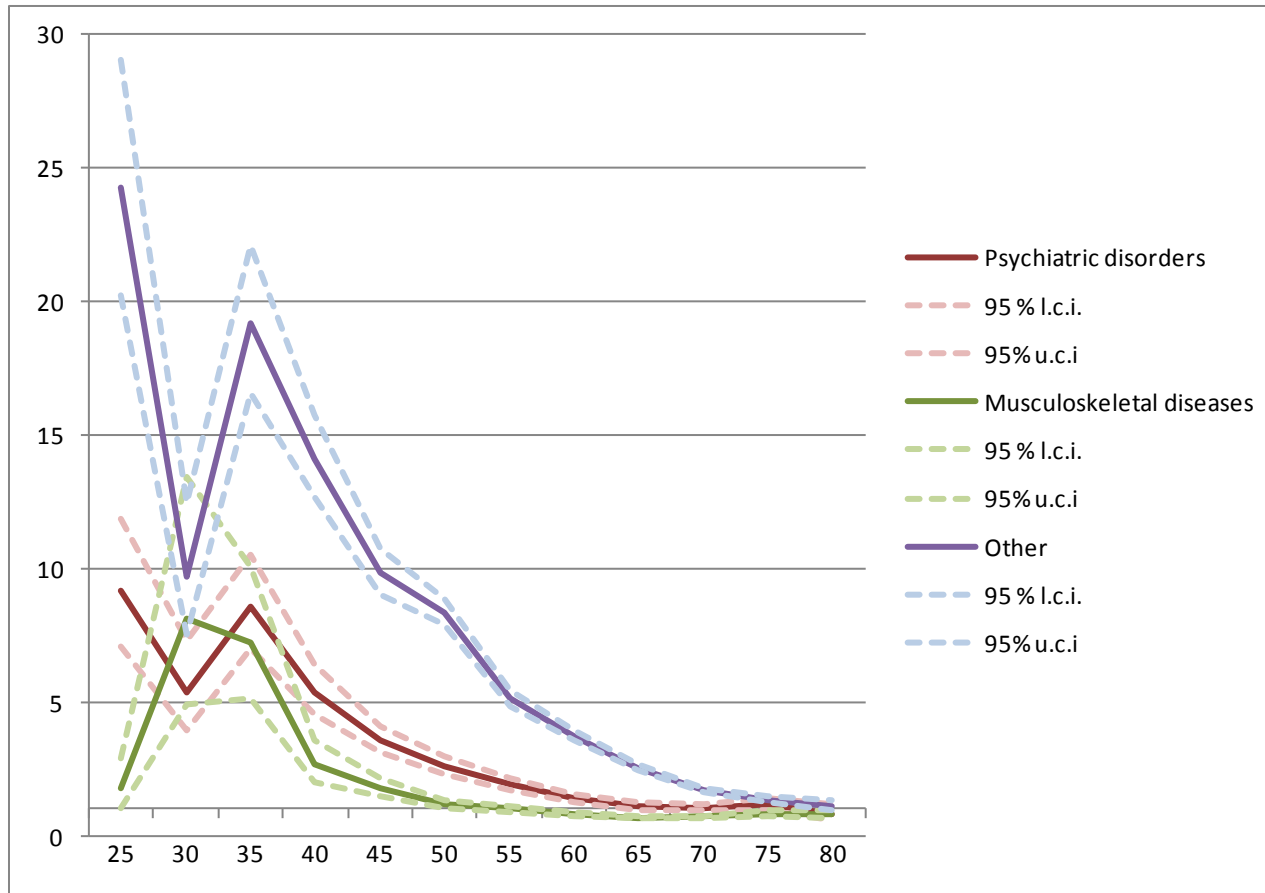
**Deaths of disable women between 18 and 67 years**



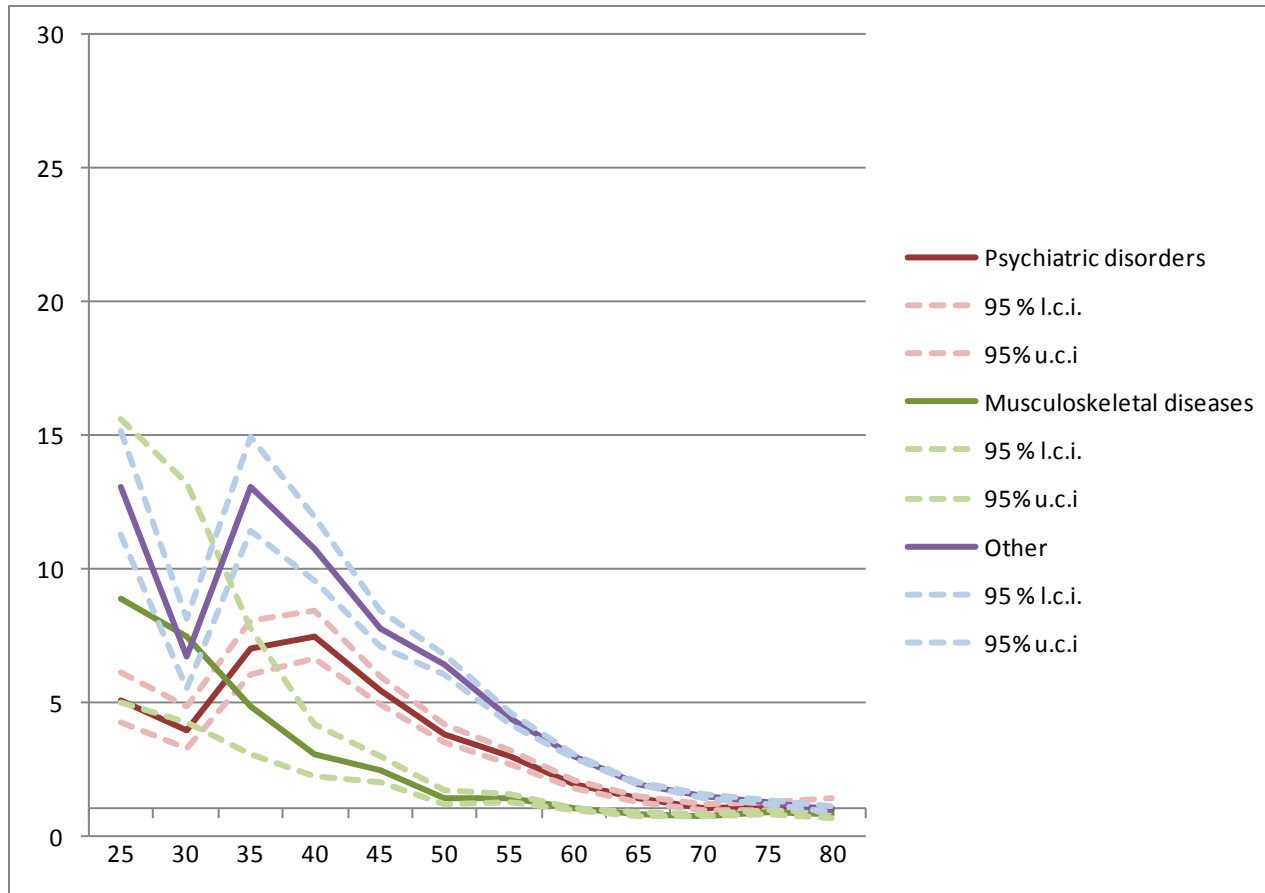
**Deaths of disable men between 18 and 67 years**



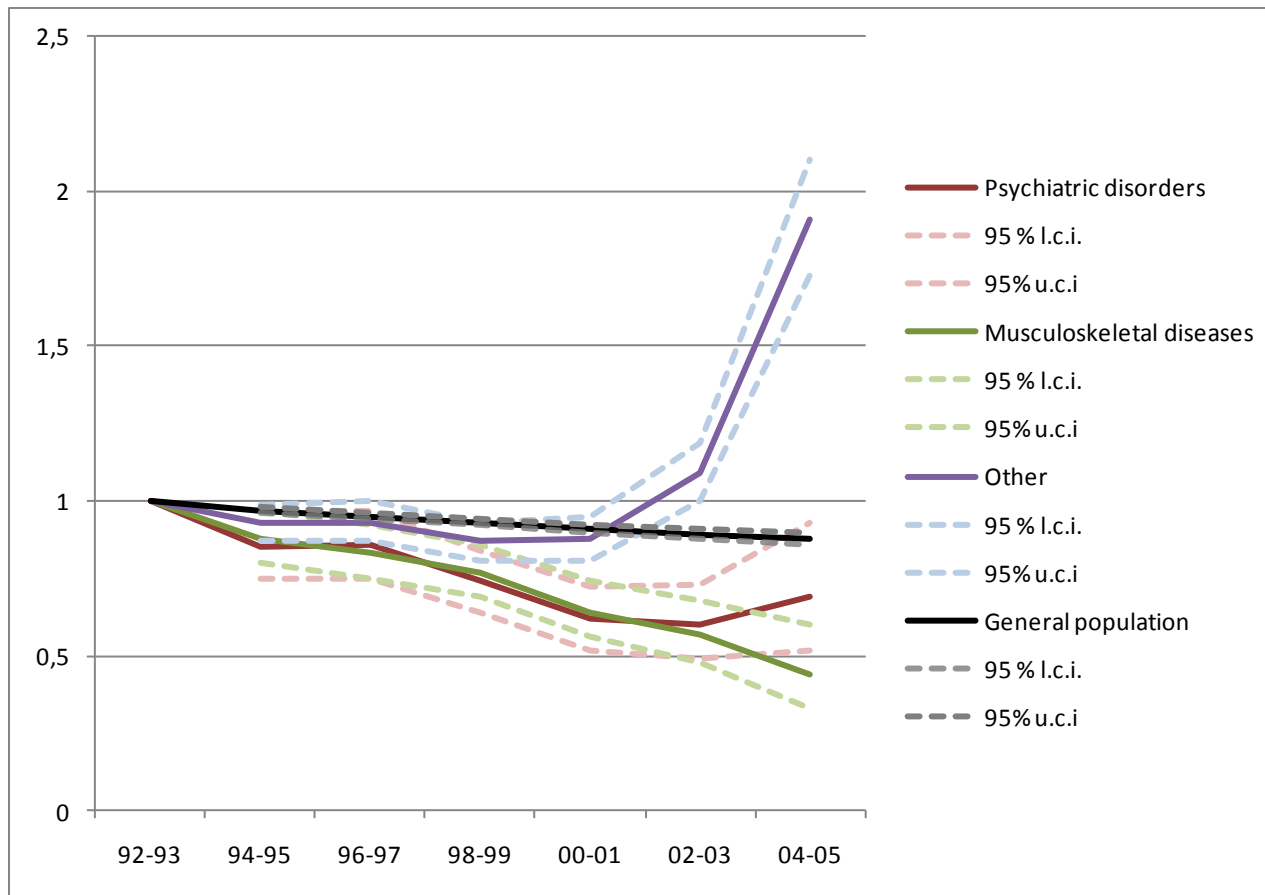
# Relative risk of dying, women



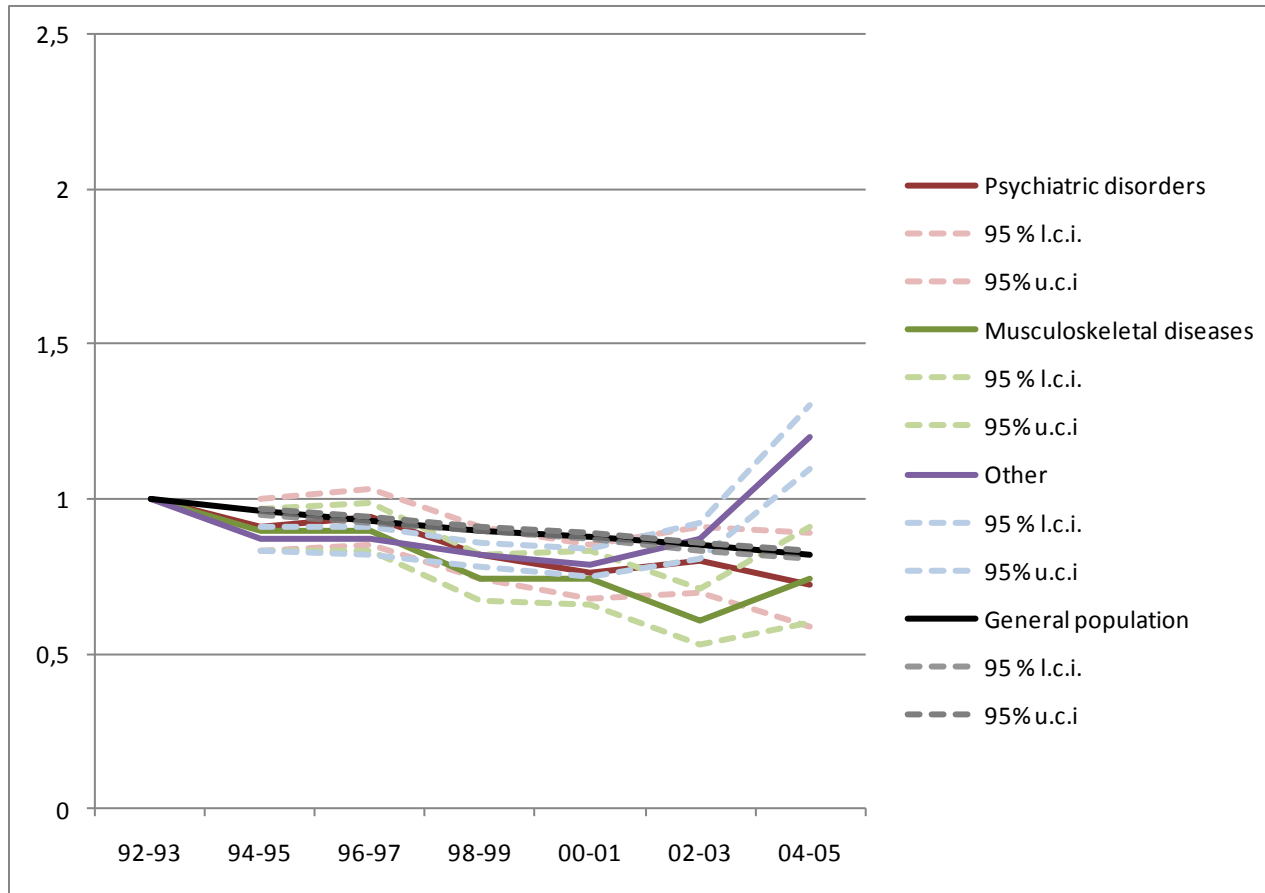
# Relative risk of dying, men



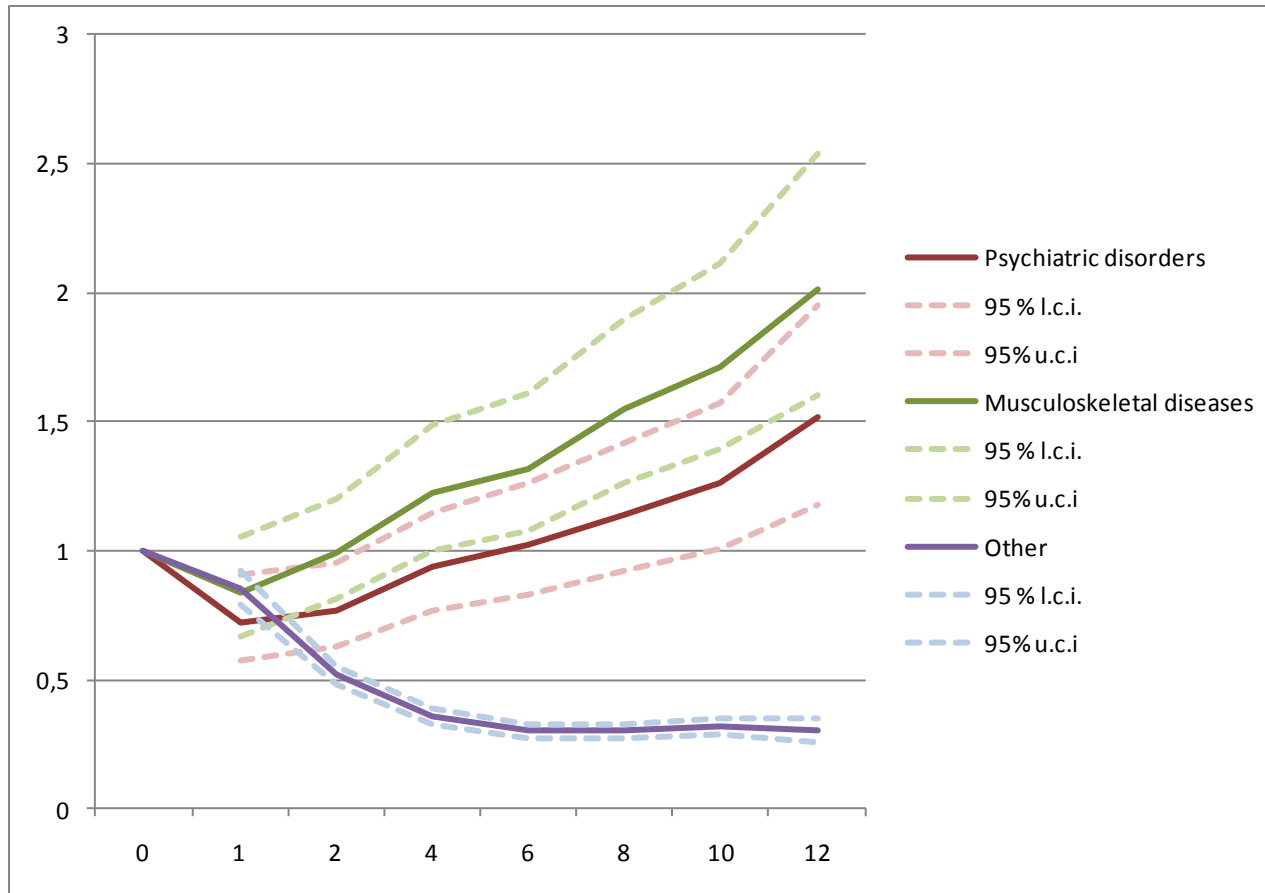
# Effects related to year of disability, women



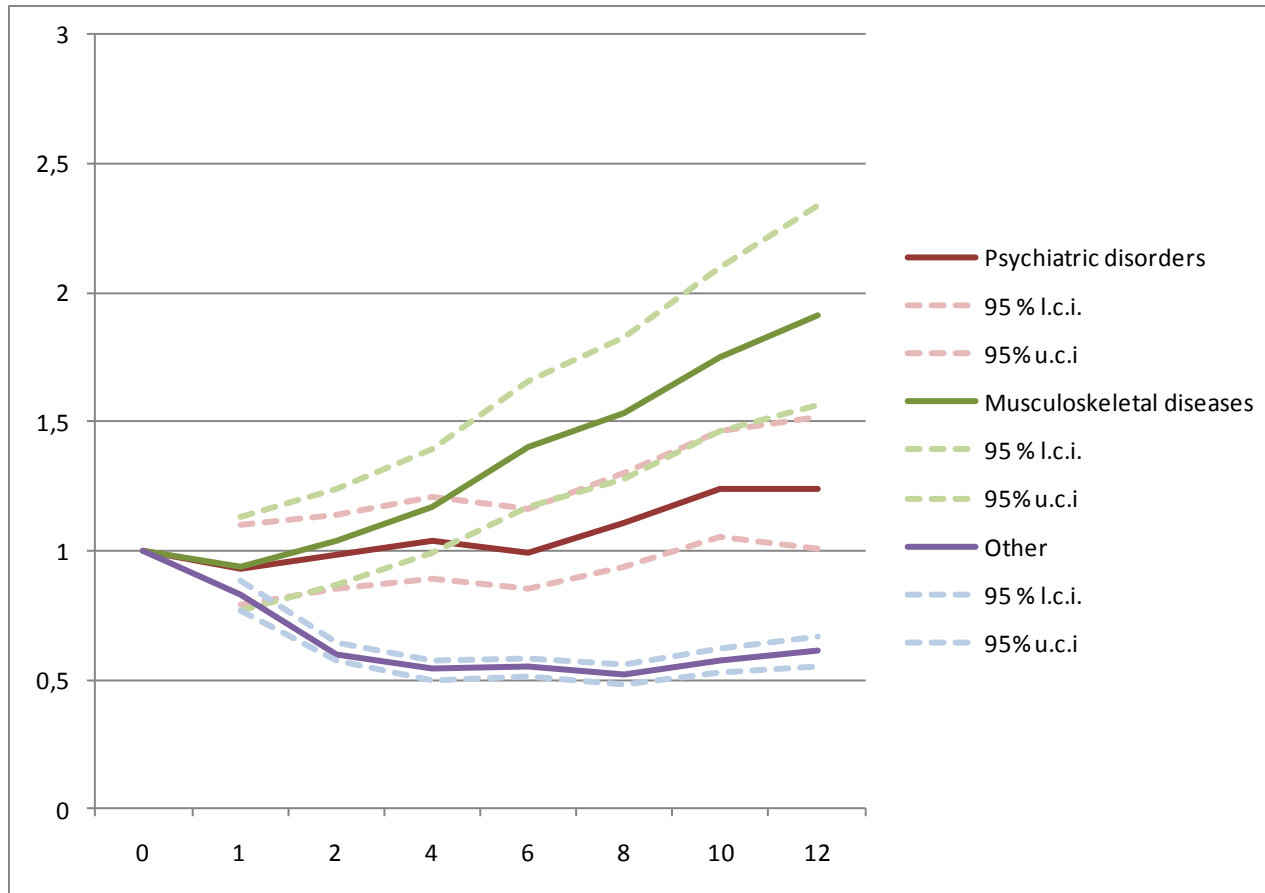
# Effects related to year of disability, men



# Effects of time from first granting disability, women



# Effects of time from first granting disability, men



# Summary



- Excess rates of death for disability pensioners compared to the general population
- Rates of death are strongly age related.
- Both year of disability pensioning and years from time of granting disability pension are significant explanatory variables when considering the rates of death of the different disability causes.

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