The effects of lifetime exposure to shift work on fitness for duty and health in the police force of a federal state of the Federal Republic of Germany

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20th International Symposium on Shiftwork and Working Time
Stockholm, June 28 – July 1, 2011
Background

- Ageing and demographic change in Europe and other global economies

- Increase in retirement age
  - Extension of working time and exposure time
  - Increase of work load (equivalent dosis)
  - Health and safety effects
Research Question

- How does lifetime shift work exposure effect health/fitness for duty in police officers?
  - Is there an increase in health impairments with increasing years worked in shiftwork?

- Compare results with previous findings from an internet survey (Nachreiner et al., 2010)
Study sample

- Police officers in a German federal state
- Employment records 2002-2008
  - Overall sample (whole police force)
    n ≈ 10,000 per year
  - n=2460 cases from 8 police districts
- Information about
  - Fitness for duty
  - Years in shift work until first limitation in fitness for duty
  - age
Statistical analysis

- Cox-Regression
  - predicting reduced fitness for duty
  - across number of years worked in shiftwork
  - Covariates: age, police district
Adjusted* risk of reduced fitness for duty over lifetime shift work

*Cox Model adjusted for age and police district
Trends in risk of reduced fitness for duty over lifetime shift work*

*Cox Model adjusted for age and police district
Exponential trend in risk of reduced fitness for duty over lifetime shift work*

*Cox Model adjusted for age and police district

R² = 0.84
Comparison of hazard rates in 2 studies

Internet Survey (n=137): Results adjusted for age, gender, type of duty; exp. $R^2=0.35$

Employment Records (n=2460): Results adjusted for age, police station; exp. $R^2=0.84$
Conclusions

➤ exposure to shift work during working life has an impact on fitness for duty among police officers

➤ Results of 2 different methods of data collection showed consistent results
  – exponential trend
  – rapid risk increase after 20 years of shift work
Limitations

- confounding variables
- censored data could not be included
- quality of the data?
Thank you for your attention!

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