# Does education protect against the detrimental effect of unemployment? Male mortality Belgium 2001-11

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## Introduction

Belgium witnessed, as other European countries, profound socio-economic changes during the past forty years, including the de-standardisation of the Fordist employment model. In this Fordist model, working careers in industrialized countries were highly predictable, consisting of a more or less fixed sequence from schooling, over employment and progressive career building to retirement (Paugam 2000). The standard employment relationship (SER) was characterised by stable, full time, socially protected and collectively regulated (male) employment (Bosch 2004). From the 1970's onwards the period of institutionalisation and standardisation was succeeded by a period of de-institutionalisation, de-standardisation and de-stabilisation (Bessin 1999).

This transition has been accompanied with rising unemployment levels and stronger links between unemployment rates and economic conjuncture. During the latest economic crisis, unemployment has increased considerably. In 2012, there were 10.7% (18.7 million) unemployed persons in the Eurozone and 7.5% unemployed persons in Belgium. Considerable regional differences exist in this respect. In 2011, unemployment rises to 16.9% in the Brussels-Capital Region compared to 9.5% in the Walloon Region and 4.3% in the Flemish Region. Long-term unemployment has become more common and now also affects the higher educated and the higher socio-professional groups and ethnic minorities. Research into the mortality effects of joblessness is thus timelier than ever.

At the individual level, employment status is a key factor determining the financial and psychological well-being of individuals and their families. The effects of unemployment are assumed to be mediated through psychosocial stress (Martikainen et al. 1996). It is hypothesized that material deprivation, loss of income, loss of social networks and social stigma exert an independent effect on health and mortality, but also increase stress levels.

Despite the availability of data in Belgium, there has been very limited research in this area. To fill this gap, this contribution wishes to probe into the association between unemployment and mortality. The aim is to assess the relation between unemployment and overall and cause-specific mortality in men, to investigate whether education can buffer the detrimental effect of unemployment and whether this effect depends upon nationality of origin.

## Materials and methods

Analyses are based on exhaustive population-wide data, consisting of a linkage between the 2001 Belgian census and register information on survival status, emigration status and cause of death during the period 01/10/2001-31/12/2011.

The research population comprises all men aged 30 to 59. All men were first classified by activity status, a detailed variable distinguishing the employed and a broad range of non-working population categories. Men were also classified by employment status, contrasting employed and unemployed men who were actively seeking for a job. Differences by employment status are controlled for age (continuous variable), education, housing quality, living arrangement and nationality of origin. Education was

categorized according to the International Standard Classification of Education (ISCED): pre-primary and primary education (ISCED 0-1); lower secondary education (ISCED 2); upper secondary education (ISCED 3) and tertiary education (ISCED 4-6). Housing quality consisted of 5 categories: insufficient quality, basic quality, good quality, good quality and spacious and good quality and very spacious. Living arrangement indicated whether the respondent was single, single with child, a child, part of a couple or belonging to the rest group. Nationality of origin distinguished respondents with a Belgian origin, European and Western origin, non-European, Turkish and Moroccan origin. Finally, the employment variable was cross-classified with the educational variable. Causes of death were classified by the ICD-10.

As there is a great concern about selection effects in investigating the health impact of unemployment, analyses have been controlled for health status. This variable distinguishes men in good and very good health from those in less than good health. The association between overall and cause-specific mortality was estimated in terms of hazard ratios estimated using a Cox model. Control factors were introduced stepwise in order to get an idea of the impact of each of these factors. In addition, analyses were stratified according to nationality of origin as to investigate whether effects vary across these groups.

## Results

Analyses focussed on the protective effect of education vis-à-vis the detrimental health impact of unemployment. To investigate this effect, different subgroups were delimited in order to assure the exclusion of selection effects. Selection effects are of great concern in studies on the health impact of unemployment. Currently unemployed persons might have had health problems before they had lost their job (i.e. reverse causation). Controlling for health status at baseline (2001) and excluding particular categories from the analyses (men who never worked, those who did not work because of social, family and health issues and the retired) resulted in relatively stable mortality rates trough among the unemployed (figure 1). This stability is indicative of the fact that selection effects have generally been ruled out.

*Figure 1:Hazard ratio by employment status and period,*
*men aged 30-59, Belgium 2001-2011*
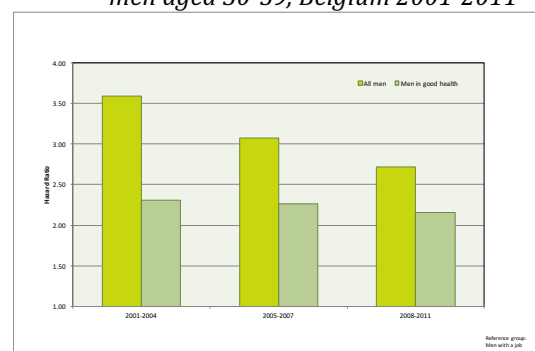


Source: Belgian census 2001 linked to register information 2001-2011

The analyses thus focussed on the employed versus unemployed men (actively looking for a job) in good health. The research results show that notwithstanding a high educational level and excellent housing conditions, unemployed men still have a higher mortality risk (table 1). Likewise control for nationality of origin and living arrangement does not change the hazard ratios substantially.

*Table 1: Hazard ratios by employment status,*
*men aged 30-59 at baseline, Belgium 2001-2011*

| | Men in good health aged 30-59, 2001-2011 | | | | | |
|---|---|---|---|---|---|---|
| | M1 | M2 | M3 | M5 | M6 | M7 |
| **Age** | 1.09 | 1.08 | 1.09 | 1.08 | 1.09 | 1.09 |
| **Employment status** | | | | | | |
| Working | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Not working | 2.22 | 2.03 | 2.00 | 2.34 | 1.94 | 1.82 |
| **Education** | | | | | | |
| No/primary education | | 1.76 | | | | 1.61 |
| Lower secondary education | | 1.59 | | | | 1.48 |
| Higher secondary education | | 1.37 | | | | 1.31 |
| Higher education | | 1.00 | | | | 1.00 |
| **Housing quality** | | | | | | |
| Insufficient quality | | | 2.12 | | | 1.58 |
| Basic quality | | | 1.70 | | | 1.37 |
| Good quality | | | 1.34 | | | 1.14 |
| Good and spacious | | | 1.20 | | | 1.10 |
| Very good and spacious | | | 1.00 | | | 1.00 |
| **Origine** | | | | | | |
| Belgian origin | | | | 2.01 | | 2.18 |
| Europen and Western origin | | | | 1.75 | | 1.84 |
| Non-Western origin | | | | 1.41 | | 1.57 |
| Turkish origine | | | | 1.11 | | 1.19 |
| Moroccan origin | | | | 1.00 | | 1.00 |
| **Living arrangement** | | | | | | |
| Child | | | | | 1.64 | 1.49 |
| Single | | | | | 1.81 | 1.69 |
| Single with child | | | | | 1.40 | 1.37 |
| Other | | | | | 1.71 | 1.55 |
| Couple | | | | | 1.00 | 1.00 |

Red: not significant

Source: Belgian census 2001 linked to register information 2001-2011

Education seems to have a slight protective effect against the detrimental health impact of unemployment (figure 2). Unemployed men have a lower mortality when they have a tertiary diploma compared to other groups of unemployed men. Differences decline after introduction of control factors, but remain significant. More important, figure 2 clearly illustrates that being employed lowers mortality considerably, independently of the educational level. Employed men without or with low education for instance show lower mortality rates than unemployed men with tertiary education. In this sense, the protective effect of education can be judged as rather small.

*Figure 2:      Hazard ratio by employment status and education cross-classified, men aged 30-59, Belgium 2001-2011*
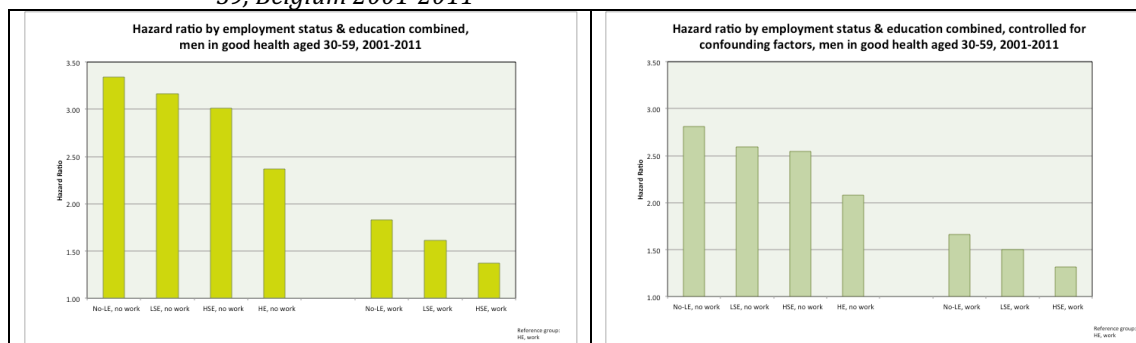


Source: Belgian census 2001 linked to register information 2001-2011

This protective effect varies by ethnicity, being less pronounced among Turkish and Moroccan communities in Belgium. Differences between the employed and the unemployed are less consistent and there is not a real gradient by education within the group of employed and unemployed men.

A causes-of-death analysis shows that the mortality excess of the unemployed stems from higher mortality risks for all large cause groups (table 2).

*Table 2: Hazard ratios by employment status, cause-specific mortality, men aged 30-59 at baseline, Belgium 2001-2011*

| | Sig. | Exp(B) | | Sig. | Exp(B) |
|---|---|---|---|---|---|
| | | | **Men in good health aged 30-59, 2001-2011** | | |
| **All causes** | 0.00 | 2.22 | **All causes** | 0.00 | 2.22 |
| **Large ICD-10 groups** | | | **Specific causes** | | |
| Infectious diseases | 0.00 | 3.58 | Cancer of lip, oral cavity and pharynx | 0.00 | 3.82 |
| Neoplasms | 0.00 | 1.76 | Lung cancer | 0.00 | 2.39 |
| Diseases blood | 0.23 | 0.98 | Cancer of the liver | 0.00 | 2.32 |
| Endocrine, nutritional and metabolic diseases | 0.00 | *3.45* | Alcohol psych., dependency & abuse | 0.00 | 6.22 |
| Mental and behavioral disorders | 0.00 | 5.93 | Alcohol-related mortality | 0.00 | 4.11 |
| Diseases of the nervous system | 0.00 | 2.42 | Cirrhosis of the liver | 0.00 | 3.49 |
| Diseases of the eye and adnexa | -- | -- | Alcohol poisonning | 0.00 | 5.18 |
| Diseases of the ear and mastoid process | -- | -- | Diabetis | 0.00 | 2.87 |
| Diseases of the circulatory system | 0.00 | 2.13 | Hypertension | 0.02 | 1.76 |
| Diseases of the respiratory system | 0.00 | 3.22 | Ischaemic heart disease | 0.00 | 1.88 |
| Diseases of the digestive system | 0.00 | 3.45 | Pneumonia | 0.00 | 3.09 |
| Diseases of the skin and subcutaneous tissue | 0.57 | 1.54 | Chronic bronchitis | 0.61 | 1.46 |
| Diseases of the musculoskeletal system & connective tissue | 0.07 | 1.90 | Other Chronic obst.pulm. disease | 0.00 | 3.84 |
| Diseases of the genitourinary system | 0.00 | 2.49 | Road accidents | 0.00 | 1.55 |
| Congenital mal- & deformations, chrom.abnormalities | 0.00 | 2.49 | Accidental fall | 0.00 | 2.82 |
| Symptoms, signs and abnormal findings | 0.00 | 3.49 | Suicide | 0.00 | 2.23 |
| Injury, poisoning and other cons. of external causes | -- | NC | | | |
| External causes of morbidity and mortality | 0.00 | 2.01 | | | |
| Unlinked | 0.00 | 2.26 | | | |

Source: Belgian census 2001 linked to register information 2001-2011

The excess is particularly elevated for the group of alcohol-related mortality, risks being three to four times higher among the unemployed compared to the employed. The mortality excess is even more pronounced, up to 5 to 6 times higher, for the single-causes 'alcohol psychosis, dependency and abuse' and 'alcohol poisoning'.

## Conclusion

The data confirm the negative association between mortality and unemployment. Analyses have shown that notwithstanding a high educational level and excellent housing conditions, unemployed people still have a higher mortality risk in Belgium. Education offers a rather slight protective effect against the health problems associated with unemployment. The mortality excess among the unemployed is observed for all causes of death, but specifically pronounced for or alcohol-related causes of death.

The protective effect of education varies by ethnicity, being less pronounced among Turkish and Moroccan communities in Belgium. In this respect, it is crucial to install policies that assure employment in all population groups. Education does slightly protect against these detrimental effects of unemployment, but not in the same way across ethnic communities in Belgium. Specific measures and policies should address the specific problems faced by the lower educated people in society and the Turkish and Moroccan communities in Belgium.

## References
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