Macroeconomic fluctuations and educational inequalities in suicide mortality among working-age men in the Baltic countries and Finland in 2000–2015: A register-based study

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ARTICLE INFO	ABSTRACT
	Introduction: In the 2000s, the Baltic countries experienced unprecedented economic growth followed by a deep recession. This study aimed to examine changes and educational inequalities in suicide mortality among working-age men in the Baltic countries and Finland in relation to macroeconomic fluctuations. *Methods:* We analysed changes in overall suicide mortality and by educational level between the 2000–2003, 2004–2007, 2008–2011 and 2012–2015 periods among men aged 30–64 years using census-linked longitudinal mortality data. We estimated age-standardised mortality rates, mortality rate ratios (Poisson regression), the relative index of inequality and slope index of inequality. *Results:* Overall suicide mortality fell markedly from 2000–2003 to 2004–2007. The decline was largest among high educated men in the Baltic countries and among middle and low educated men in Finland. From 2004–2007 to 2008–2011, the positive trend slowed and while suicide mortality continued to fall among middle and low educated men, it increased somewhat among high educated men in all Baltic countries. In Finland, suicide mortality decreased among the high educated and increased slightly among low educated men. *Conclusions:* In the Baltic countries, lower educated men had a smaller decline in suicide mortality than higher educated men during a period of rapid economic expansion, however, they were not more disadvantaged during the recession, possibly because of being less exposed to financial loss. Consequently, relative inequalities in suicide mortality may increase during economic booms and decrease during recessions.

1. Introduction

The global suicide rate fell by a third between 2000 and 2012 (WHO, 2014). Among men, the largest decline occurred in some Eastern European countries (Alicandro et al., 2019) which nevertheless had the highest suicide rates in the world even in 2016 (WHO, 2020). These overall positive trends were interrupted after the onset of the global financial crisis with the 2008 economic recession quickly affecting

suicide mortality in many countries. Although the suicide rate increased throughout the general population (Chang et al., 2013) a larger effect was seen among men at working ages (Reeves et al., 2014), and in countries with less social protection (Norström and Grönqvist, 2015). The reasons for such rapid changes in suicide mortality are not clear although various mechanisms might be involved. For example, mental disorders, harmful alcohol use, and job or financial loss are all important individual-level risk factors for suicide that are conditioned by

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socioeconomic status and linked to the effects of wider macroeconomic processes (WHO, 2014). Substantial educational inequalities in suicide mortality exist in Europe and the gap has widened in many countries over the past two decades (Lorant et al., 2018). Despite this, there is only limited evidence on how the recent recession and macroeconomic processes in general have affected suicide mortality in different socioeconomic groups (Coope et al., 2014; Regidor et al., 2016).

This study focused on the Baltic countries – Estonia, Latvia and Lithuania – which experienced unprecedented macroeconomic fluctuations in the 2000s: per capita gross domestic product (GDP) increased more than four-fold between 2000 and 2008 while the unemployment rate reached its lowest level (4–6%) in 2007 (Fig. 1). Subsequently, GDP decreased sharply following the global financial crisis. Specifically, with a 19–25% reduction in per capita GDP from 2008 to 2009 and the unemployment rate more than trebling between 2007 and 2010, the Baltic countries were among the most severely affected in Europe (World Bank, 2020). Against this backdrop, we aimed to examine the changes in overall suicide mortality and by educational level among working-age men in the Baltic countries in relation to macroeconomic fluctuations. We also assessed how these changes affected educational inequalities in suicide mortality. To better contextualise the findings the results were compared to what happened in Finland, a neighbouring, wealthier Nordic welfare state.

2. Methods

2.1. Data

Data for Estonia, Latvia and Lithuania were obtained from longitudinal mortality follow-up studies of population censuses in 2000 (2001 in Lithuania) and 2011 involving all permanent residents. The censuses in the Baltic countries combined traditional survey-based enumeration (the share of coverage ranged from 91% in Latvia to 98% in Estonia) and register-based enumeration (Statistical Office of Estonia et al., 2015). The register-based data did not include information about socioeconomic status and were therefore excluded from the analysis. All individuals were followed from the census date until the date of death or emigration, or until the end of the follow-up period. The date and cause

of death were linked from national mortality registries. All data linkages were performed by National Statistical Offices. Corresponding data for Finland were obtained from the longitudinal register-based population data file of Statistics Finland covering the total population. Data were organised into four sub-periods: 2000–2003 (representing moderate economic growth), 2004–2007 (economic expansion), 2008–2011 (recession) and 2012–2015 (stabilisation). The population exposures for those aged 30 years and older were estimated by adding up the number of person years lived by individuals within each 5-year age interval in a given period. Deaths were allocated to age intervals using the age at death. Data were anonymised and aggregated into multidimensional frequency tables combining deaths and population exposures split by study periods and sociodemographic variables before they were delivered for research purposes. The research was conducted in accordance with the latest version of the Declaration of Helsinki.

2.2. Measures

Suicide deaths were classified as X60–X84, Y87.0 using the 10th revision of the International Classification of Diseases (ICD-10). Sociodemographic data are census based and were coded by Statistical Offices following a common study protocol. Educational level was categorised using the International Standard Classification of Education (ISCED) 2011 (UNESCO, 2012). *Low* education refers to primary and lower secondary education (ISCED categories 0–2), *middle* education includes upper secondary and post-secondary non-tertiary education (categories 3–4), and *high* education covers tertiary education (categories 5–8). The percent of missing values for education was low (0–0.8%) and these cases were additionally excluded from the analysis. Using previous research as a guide (Reeves et al., 2014), the data analyses focused on the male working-age population (aged 30–64 years), regarded as the most vulnerable group in times of economic recession.

2.3. Statistical analysis

For descriptive purposes age-standardised mortality rates (ASMRs) per 100 000 person years were calculated using the European Standard Population (Waterhouse et al., 1976). To assess changes in mortality
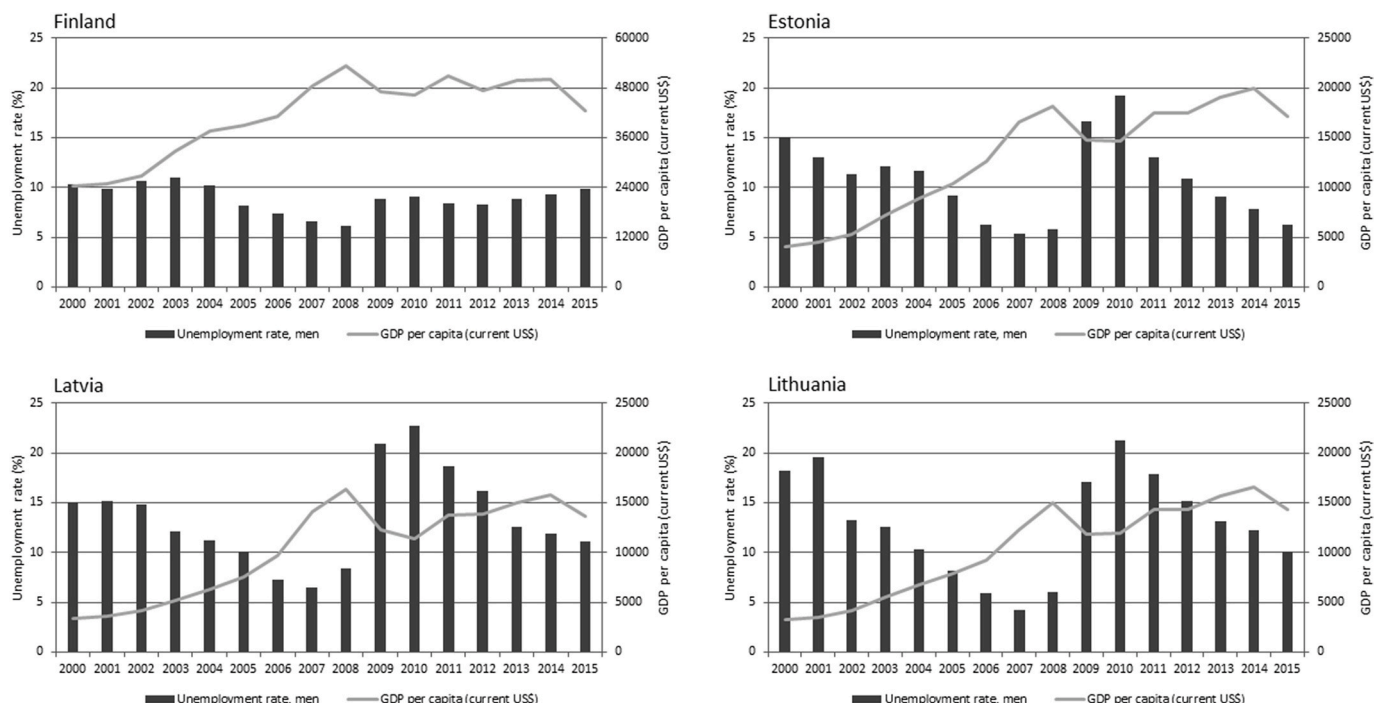

Fig. 1. Macroeconomic changes between 2000 and 2015. Source: The World Bank Open Data (World Bank, 2020).

between two consecutive study periods we calculated age-adjusted mortality rate ratios (RRs) using Poisson regression; the preceding period was defined as the reference category (RR = 1) and 95% confidence intervals (CIs) were calculated to ascertain statistically significant changes. Educational inequalities in suicide mortality were assessed using the relative index of inequality (RII) and slope index of inequality (SII) (Mackenbach and Kunst, 1997). The RII and SII are regression-based measures that adjust the relative position of each educational group to its share in the population thus taking into account differences between countries or time-periods in the population distribution by educational level. The relative position is assessed with educational rank, a cumulative proportion of each educational group within the educational hierarchy, with 0 (for the highest educated) and 1 (for the lowest educated) as the extreme values on the rank order. Age-adjusted RIIs were calculated with Poisson regression with educational rank as an independent variable. The RII can be interpreted as the mortality rate ratio comparing those with the lowest educational level to those with the highest educational level. The SII measures absolute mortality rate differences between the lowest and highest end of the educational hierarchy. SIIs were calculated from the RIIs and the overall ASMRs by using the formula SII = 2*ASMR*(RII-1)/(RII+1). To assess the magnitude and direction of the potential bias related to the exclusion of register-based data from census records in the Baltic countries we performed a sensitivity analysis for Latvia comparing all-cause and suicide mortality estimates while excluding and including register-based data. Statistical analyses were conducted using SPSS Statistics for Windows, version 26.0 (IBM Corp. 2019) and STATA 14.2 (Stata Corp., College Station, Texas, USA).

3. Results

The characteristics of the study populations are presented in Table 1. In total, the analysis included 21 318 suicide deaths and about 42 million person years. In all countries, the percentage of men with tertiary education increased considerably between 2000 and 2015. The ASMRs for all-cause mortality were higher in the Baltic countries than in Finland.

The results for suicide mortality are presented in Table 2. The ASMRs for overall suicide mortality were also higher in the Baltic countries

compared with Finland. From 2000–2003 to 2012–2015 the ASMRs declined considerably in all countries; the mortality gap with Finland shrunk for Estonia. When using mortality RRs to assess changes between two consecutive periods, the largest decline in suicide mortality in the Baltic countries was observed between 2000–2003 and 2004–2007: the RRs in 2004–2007 ranged from 0.69 in Estonia to 0.84 in Lithuania, indicating a respective 31% and 16% decline from 2000–2003. In all countries, the decline slowed down between 2004–2007 and 2008–2011. This was in sharp contrast to all-cause mortality where the decline between 2000–2003 and 2004–2007 was only modest in Estonia, while mortality even increased in Latvia and Lithuania, followed by a substantial decline from 2004–2007 to 2008–2011 (Table 1). In Finland, the largest decline in both all-cause and suicide mortality was seen between 2008–2011 and 2012–2015.

From 2000–2003 to 2004–2007, the relative improvement in suicide mortality was larger among the high educated in the Baltic countries and among the middle and low educated in Finland (Table 2). From 2004–2007 to 2008–2011, suicide mortality continued to decline among the middle and low educated in the Baltic countries but increased somewhat for the high educated. The opposite trend was observed in Finland where suicide mortality decreased among the high and middle educated from 2004–2007 to 2008–2011 but increased for the low educated. Except for Latvia, where suicide mortality continued to increase among high and low educated men, in all other countries and educational groups, suicide mortality declined between 2008–2011 and 2012–2015. Although many changes in suicide mortality across educational groups were statistically insignificant, the systematic differences observed in the direction of the changes between educational groups is nevertheless a noteworthy finding. Relative educational inequalities (RIIs) in suicide mortality increased from 2000–2003 to 2012–2015 in all countries whereas absolute inequalities (SIIs) decreased (Table 2). However, the RIIs decreased in Estonia and Latvia between 2004–2007 and 2008–2011 (in Estonia also in 2012–2015) and in Finland between 2000–2003 and 2004–2007. In 2012–2015, the RIIs and SIIs were considerably higher in Latvia and Lithuania than in Estonia and Finland.

The results from the sensitivity analyses for Latvia showed that by excluding register-based records we somewhat underestimated all-cause mortality but the effect on suicide mortality was minimal (Supplementary Table S1).

Table 1
Characteristics of the study populations and changes in all-cause mortality among men aged 30–64 years.

Country	Period	Suicides	Person years	Educational level, %				All-cause mortality	
		N	N	High	Middle	Low	Missing	ASMR	RR (95% CI)
Finland	2000–2003	2295	5 014 521	28.2	40.9	31.0	0.0	537.3	–
	2004–2007	1942	4 981 204	28.2	44.4	27.4	0.0	529.2	0.99 (0.97–1.00)
	2008–2011	1851	4 958 251	26.1	48.9	25.0	0.0	481.2	0.91 (0.90–0.93)
	2012–2015	1461	4 994 862	32.2	46.8	21.0	0.0	406.1	0.85 (0.84–0.87)
Estonia	2000–2003	655	1 051 503	26.2	51.4	22.3	0.8	1191.6	–
	2004–2007	482	1 110 331	25.8	54.5	19.7	0.8	1089.7	0.91 (0.89–0.94)
	2008–2011	421	1 113 756	24.0	56.6	19.3	0.8	861.4	0.79 (0.77–0.81)
	2012–2015	366	1 145 574	31.2	52.3	16.5	0.3	735.0	0.85 (0.83–0.88)
Latvia	2000–2003	1145	1 652 898	15.5	61.8	22.7	0.6	1278.7	–
	2004–2007	931	1 728 053	15.1	64.3	20.5	0.6	1300.0	1.02 (0.99–1.04)
	2008–2011	867	1 723 757	14.1	65.2	20.8	0.5	1067.5	0.82 (0.80–0.84)
	2012–2015	694	1 623 342	22.3	65.4	12.3	0.1	933.4	0.87 (0.86–0.89)
Lithuania	2001–2003	1987	2 104 762	16.9	64.6	18.5	0.5	1009.9	–
	2004–2007	2343	2 939 186	16.7	66.3	17.1	0.5	1273.3	1.26 (1.24–1.29)
	2008–2011	2139	2 935 253	16.0	66.8	17.2	0.6	1076.0	0.84 (0.83–0.86)
	2012–2015	1739	2 646 348	23.2	62.1	14.7	0.0	885.4	0.82 (0.81–0.84)

The follow up in the 1st period started from the census date in the Baltic countries, i.e. 31.03.2000 in Estonia, March 1, 2000 in Latvia, and April 6, 2001 in Lithuania. On all other occasions the follow up started on January 1 and ended on December 31 in the respective periods.
ASMR, age-standardised mortality rate per 100 000 person years.
Rate ratios (RR) are adjusted for age and calculated using Poisson regression. RRs measure the changes between two consecutive periods with each preceding period used as the reference category (RR = 1). CI, confidence interval.

Table 2
Changes in suicide mortality and educational inequalities in suicide mortality among men aged 30–64 years.

Country	Period	Total		Educational level						RII (95% CI)	SII
				High		Middle		Low			
		ASMR	RR (95% CI)	ASMR	RR (95% CI)	ASMR	RR (95% CI)	ASMR	RR (95% CI)		
Finland	2000–2003	45.7	–	24.6	–	49.2	–	65.1	–	3.24 (2.76–3.80)	48
	2004–2007	38.8	0.85 (0.80–0.91)	23.1	0.95 (0.81–1.10)	42.0	0.84 (0.77–0.92)	52.8	0.84 (0.76–0.93)	2.59 (2.19–3.08)	34
	2008–2011	37.5	0.96 (0.90–1.03)	18.9	0.85 (0.72–0.99)	39.7	0.94 (0.86–1.03)	55.7	1.02 (0.91–1.14)	3.09 (2.59–3.68)	38
	2012–2015	29.2	0.79 (0.73–0.84)	16.3	0.82 (0.69–0.98)	32.8	0.83 (0.75–0.91)	42.6	0.80 (0.71–0.91)	3.38 (2.77–4.12)	32
Estonia	2000–2003	62.9	–	39.3	–	62.1	–	97.0	–	3.04 (2.25–4.11)	64
	2004–2007	43.6	0.69 (0.61–0.78)	19.6	0.50 (0.36–0.69)	44.6	0.71 (0.60–0.83)	73.7	0.79 (0.65–0.97)	5.11 (3.56–7.33)	59
	2008–2011	37.9	0.87 (0.76–0.99)	22.3	1.12 (0.78–1.61)	37.5	0.83 (0.69–0.99)	59.5	0.84 (0.66–1.06)	3.81 (2.60–5.59)	44
	2012–2015	31.9	0.84 (0.73–0.97)	21.2	0.95 (0.68–1.34)	31.4	0.83 (0.69–1.01)	51.1	0.90 (0.69–1.17)	3.46 (2.30–5.20)	35
Latvia	2000–2003	70.2	–	29.8	–	65.6	–	105.9	–	4.01 (3.16–5.10)	84
	2004–2007	54.0	0.77 (0.71–0.84)	18.3	0.62 (0.43–0.88)	52.7	0.80 (0.72–0.90)	83.0	0.77 (0.67–0.90)	4.36 (3.34–5.70)	68
	2008–2011	50.4	0.93 (0.85–1.02)	19.5	1.04 (0.70–1.55)	50.0	0.94 (0.83–1.05)	76.2	0.88 (0.74–1.04)	3.72 (2.82–4.92)	58
	2012–2015	42.6	0.85 (0.77–0.93)	21.4	1.12 (0.78–1.61)	42.7	0.84 (0.74–0.95)	79.4	1.11 (0.91–1.36)	5.03 (3.63–6.96)	57
Lithuania	2001–2003	97.0	–	39.7	–	91.7	–	168.9	–	5.08 (4.20–6.15)	130
	2004–2007	80.9	0.84 (0.79–0.89)	28.5	0.72 (0.57–0.91)	80.1	0.86 (0.80–0.93)	132.9	0.83 (0.75–0.93)	5.04 (4.23–6.00)	108
	2008–2011	73.0	0.91 (0.85–0.96)	28.9	1.04 (0.83–1.31)	70.1	0.88 (0.82–0.95)	118.6	0.91 (0.81–1.02)	5.10 (4.24–6.14)	98
	2012–2015	65.1	0.89 (0.84–0.95)	24.2	0.84 (0.67–1.06)	69.9	0.97 (0.90–1.05)	100.8	0.89 (0.78–1.01)	5.47 (4.46–6.70)	90

ASMR, age-standardised mortality rate per 100 000 person years.
Rate ratios (RR) are adjusted for age and calculated using Poisson regression. RRs measure the changes between two consecutive periods with each preceding period used as the reference category (RR = 1). CI, confidence interval;RII, relative index of inequality; SII, slope index of inequality per 100 000 person years.

4. Discussion

Overall suicide mortality declined markedly among men aged 30–64 years between 2000–2003 and 2004–2007. In the Baltic countries, the relative decline was largest among high educated men, whereas in Finland the decline was largest among middle and low educated men. From 2004–2007 to 2008–2011, the overall positive trend slowed and while suicide mortality continued to fall among the middle and low educated, it increased somewhat among high educated men in all Baltic countries. In Finland, suicide mortality decreased among the high educated but increased slightly among the low educated. Although relative educational inequalities in suicide mortality mostly increased over the study period they decreased in Estonia and Latvia between 2004–2007 and 2008–2011 (in Estonia also in 2012–2015) and in Finland between 2000–2003 and 2004–2007. Absolute educational inequalities in suicide mortality mostly decreased in different time periods and were lower in all countries in 2012–2015 compared with 2000–2003.

In 2000–2007, economic output in the Baltic countries grew faster than in most European countries. The annual growth rate accelerated in the second half of this period, and by 2007, the Baltic countries were among the most overheated economies in the world (Kattel and Raudla, 2013). The enormous growth was driven by a massive credit and investment boom mostly in residential housing and the construction sector financed by large capital inflows from foreign banks (Brixiova et al., 2010). The domestic bubble burst in early 2008 when the credit supply slowed down, and banks started tightening credit conditions (Kattel and Raudla, 2013). The global economic crisis that followed in the wake of the Lehman Brothers bankruptcy further aggravated the local credit crunch and in 2009, the Baltic countries entered a deep recession (World Bank, 2020). All of the countries implemented sizeable fiscal consolidation which included tax increases and reductions on social expenditures and public sector wages (Kattel and Raudla, 2013). The crisis was severest in Latvia where the government was forced to seek financial help from the IMF and EU, while in Lithuania the boom-bust cycle was somewhat more restrained. In Finland, the changes in macroeconomic indicators were less dramatic. In 2011, recovery started, with per capita GDP surpassing the pre-recession level by 2013 in Estonia and Lithuania. However, in Finland and Latvia GDP had still not reached its 2008 level

even by 2015 (World Bank, 2020).

In contrast to many other causes of death the relationship between the business cycle and suicide mortality has been found to be counter-cyclical: suicide rates generally decrease when the economy expands and increase during recessions (Ruhm, 2000). Our results showing a strong decline in overall suicide mortality among men during the period of economic expansion and a halt in this trend (signalled by an increase in suicide mortality in some groups of the population) during the recession are in line with these findings. These results are lent credence by previous research showing a substantial decline in the prevalence of depression (one of the main risk factors for suicide) in Estonia during the time of economic growth and subsequent increase during the recession (Leinsalu et al., 2019).

Several factors could have contributed to these developments in the Baltic countries. Extremely low unemployment and strong wage growth during the boom boosted private consumption and considerably improved household living standards for many, while EU and NATO accession in 2004, seen as a guarantee of national security, further fuelled overly optimistic attitudes towards continuing economic progress. According to Easterlin there is a positive relationship between economic growth and happiness in the short term, whereas economic contractions induce corresponding reductions in happiness (Easterlin, 2013). Happiness and life satisfaction have been correlated with reduced suicide rates in Europe, particularly among men (Bray and Gunnell, 2006). At the same time, huge credit growth led to a high private debt burden (Brixiova et al., 2010) and indebtedness strongly predicts common mental disorders and suicide (Meltzer et al., 2013). There is accumulating evidence that financial loss and home foreclosures had a detrimental effect on male suicide rates independent of other economic factors during the 2008 recession (Coope et al., 2014; Houle and Light, 2014). House prices more than doubled in 2003–2007 in the Baltic countries but dropped sharply after the credit crunch (Kattel and Raudla, 2013). Financial loss, especially when combined with job loss might explain, at least in part, why the decline in overall suicide mortality slowed during the recession. Macroeconomic changes, through their impact on health expenditure (Maresso et al., 2015) may also affect access to mental health services with possible consequences for suicide mortality. The proportion of people reporting unmet medical needs in the Baltic countries fell considerably between 2005 and 2009

but increased between 2009 and 2012 as a response to austerity measures with a stronger effect seen in Estonia and Latvia (Karanikolos et al., 2016). Both economic boom and recession might also affect health behaviour. In particular, sizeable changes in personal income had a strong impact on alcohol affordability (Rabinovich et al., 2009) that may have been important for changes in suicide given the close connection between alcohol and suicide mortality (WHO, 2014). However, the strong decline in suicide mortality that occurred during the period of economic growth, suggest that the effect of increased alcohol consumption on overall suicide mortality during the boom may have been overridden by other factors.

In the Baltic countries, the decline in male suicide mortality during the economic boom was somewhat larger among the high educated. While overall unemployment decreased it still remained high among unskilled workers (Brixiova and Egert, 2012) which might explain why suicide mortality declined less among the lower educated. During the recession, differences in the unemployment rate remained across skill levels; the low educated had a nearly two times higher unemployment rate compared to the overall rate (Brixiova and Egert, 2012). Although unemployment is considered a critical determinant of variations in male suicide risk during recessions (Chang et al., 2013), our results did not show an increase in suicide mortality for the less educated in the Baltic countries. This is in line with previous research from Estonia showing no increase in the prevalence of depression from 2008 to 2010 among socioeconomically disadvantaged men (Leinsalu et al., 2019). An earlier study from Finland found that during a period of rapidly increasing unemployment the association between unemployment and suicide mortality weakens as becoming unemployed is less selective (Mäki and Martikainen, 2012). Rather, the suicide rate increased among the high educated in our study suggesting factors other than increased unemployment contributing to the suicide risk in the Baltic countries. Household debt was driven by mortgage loans with the debt burden being particularly high in high-income households that qualified for mortgages (Brixiova et al., 2010). A higher debt burden and financial loss are possible explanations for why high educated men had an increased suicide risk during the recession. Moreover, in terms of its origins and severity, the recession in the Baltic countries was similar to the recession in Finland in the early 1990s (Brixiova et al., 2010) where suicide mortality also increased only among highly educated men (Avendano et al., 2017). However, in contrast to what happened during the early 1990s recession, and to the results from the Baltic countries, suicide mortality declined significantly among high educated men in Finland during the 2008 crisis. In Finland, the 2008 crisis was much more modest and short-lived than the 1990s recession and did not lead to substantial increases in unemployment among the high educated. It is also possible that in the 2000s the high educated in Finland were more protected against financial loss due to the protective effect of welfare policies. At the same time, the decreased affordability of alcohol, as a result of tax increases and diminished incomes during the recession (Maresso et al., 2015) may have had a protective effect against suicide mortality among low educated men in the Baltic countries.

This study has several limitations that need to be considered. First, although our sensitivity analysis showed that the effect of excluding register-based records from the analysis had only a minimal effect on changes in overall suicide mortality in Latvia we cannot exclude the possibility that the effect differed by educational level. Second, we may have underestimated suicide mortality among lower educated 30–34 year old men in the 2008–2011 period as some of these men, classified as mid or low educated at the time of the 2000/01 census when they were 18–26 years old may have completed a higher level of education by 2011. Third, because of the small population sizes we combined single calendar years into 4-year periods. Although the Baltic countries were among the most affected countries during the recession, growth had resumed even as early as in 2011. Thus, we may have underestimated some of the negative effect of the recession on suicide mortality as previous research from Estonia showed that the impact of the recession

on mental health was rather short lived (Leinsalu et al., 2019). Finally, although we studied changes in suicide mortality in the context of macroeconomic changes, we cannot rule out the possibility of confounding due to other temporal changes. When reviewing these limitations, we believe that they are likely to have had only a marginal impact overall on our conclusions related to the changes and inequalities in suicide mortality. However, as some of the changes we observed were based on small death counts and are thus tentative in nature, further research is warranted to validate these findings in other settings.

Overall, our results show that in the Baltic countries experiencing rapid economic fluctuations, lower socioeconomic groups had a smaller decline in suicide mortality during a period of accelerated economic growth; however, they were not necessarily more disadvantaged during the recession as they had a lower debt burden and were therefore less exposed to financial loss. Consequently, relative inequalities in suicide mortality may increase during economic booms and decrease during recessions.

Contributions

ML, AS, DJ, PM conceptualized the study. ML, AB, DJ, JK, PM oversaw data acquisition. ML analysed the data and wrote the first and final version of the manuscript. AS helped in the formulation of core ideas, contributed to data interpretation and critically reviewed the manuscript. AB, DJ, JK and PM contributed to data interpretation and critically reviewed the manuscript. All authors approved the final version.

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Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jpsychires.2020.09.009.

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