

Online supplement

Derivation of excess suicide estimates

USA

Estimates of the excess suicides in the USA were taken from a previous study using data from the US Centers for Disease Control and Prevention.¹⁰ Briefly, we estimated a linear time trend for the suicide rate nationally for about a decade prior to the 2008–2010 recession (i.e. 1999–2007). To assess whether suicides rose over and above historical trends during the recessionary period, we included dummy variable for the years of the economic downturn (i.e. 2008–2010), yielding the estimated excess deaths of 4750 (corresponding to an acceleration as reported in the main text). Similar estimates of the excess suicides were obtained when comparing the actual number of deaths with those expected had the 1999–2007 trend continued.

Europe and Canada

Applying the same method described above to Europe, we estimate that there have been approximately 11 830 (95% CI 1330–22150) excess suicides after adjusting for historical trends. In Canada, we estimate that there have been 273 (95% CI 66–480) excess suicides. In this paper, using 2007 as the pre-recession baseline, we measure the unadjusted difference between the baseline suicide rate and the suicide rate for each year after the recession began for both Europe (2008–2010) and Canada (2008–2009; 2010 data are not yet available). We then multiplied this difference by the population of the European Union. For example, the difference in the suicide rate between 2008 and 2007 was 0.4 suicides per 100 000. Dividing by 100 000 and then multiplying by 503.7 million (the estimated population for the

27 countries in the European Union) we find that there were 2015 excess suicides in 2008, 3173 excess suicides in 2009 and 2770 excess suicides in 2010. A total of 7958 excess suicides. Using the same method for Canada, we find that there were 51 excess suicides in 2008 and 191 excess suicides in 2009. A total of 242 suicides. In the main text we report this latter, more conservative estimate of excess suicides.

Male excess deaths

To calculate the number of male excess deaths during the recessionary period over and above the change in the female suicide rate we first calculated the percentage change in the female suicide rate from 2007 onward. Between 2008 and 2007, the female suicide rate increased 2.1%. We then estimated what the male suicide rate would have been in 2008 if there had been a 2.1% increase (instead of a 4.5% increase). Then we calculate the difference in the male suicide rate in 2008 (16.35 male suicides per 100 000) and the adjust male suicide rate (15.97 male suicides per 100 000). Dividing this by 100 000 and then multiplying it by 242 874 452 (the estimated male population in the 27 countries in the European Union) we find that there would have been 933 fewer male suicides in 2008 if the male suicide rate had risen in tandem with the female suicide rate. After calculating this figure for each year we then take the sum, which is 2380 male suicides.

Additional reference

10 National Centre for Health Statistics. *Deaths: Final Data for 2010. National Vital Statistics Report, 2012.* National Centre for Health Statistics, 2012.



Fig. DS1 Age-standardised suicide rate (per 100 000) and the unemployment rate (% of the labour force) in Austria between 1995 and 2011.