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Are smokers “hardening” or rather “softening”? An ecological and multilevel analysis across 28 European Union countries

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This study does not support the hardening hypothesis in the European Union, but suggests a softening of the smoking population. However, social inequalities in heavy smoking underline the need for interventions targeting smokers in vulnerable groups. <http://bit.ly/2xfgM5v>

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ABSTRACT

Background: Tobacco control policies can reduce smoking prevalence. These measures may be less effective where smoking prevalence has significantly declined, as the remaining smokers have “hardened”. Our aim was to empirically evaluate the “hardening hypothesis” at the population level in the European Union (EU) and explore factors associated with hardcore smoking.

Methods: We conducted two separate analyses in the EU using data on smoking from the Eurobarometer surveys (2009–2017, n=112 745). 1) A panel-data fixed-effects linear regression to investigate changes over time in the percentage of hardcore smokers in relation to standardised smoking prevalence at the country level. 2) A multilevel logistic regression analysis with hardcore (daily smokers, ≥15 cigarettes per day who have not attempted to quit in the last 12 months) or light (<5 cigarettes per day) smoking as the dependent variable and time as the main independent variable, controlling for individual and ecological variables.

Results: We studied 29 010 current smokers (43.8% hardcore smokers and 14.7% light smokers). The prevalence of hardcore smoking among adult smokers increased by 0.55 (95% CI 0.14–0.96) percentage points per each additional percentage point in the overall smoking prevalence. The odds of being a hardcore smoker increased over time and were higher in middle-aged males and people with financial difficulties, while the odds of being a light smoker significantly declined among females.

Conclusion: This study does not support the “hardening hypothesis” in the EU between 2009 and 2017, but suggests a softening of the smoking population. Existing tobacco control policies are likely to be suitable to further decrease smoking prevalence in Europe.