The association between tobacco control policy and educational inequalities in smoking cessation in The Netherlands from 1988 through 2011
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Background
Tobacco control policies have succeeded in reducing the prevalence of smoking, but generally have failed to reduce socio-economic inequalities. It has been argued that a comprehensive mix of policies could reduce inequalities, but evidence for this is lacking. In The Netherlands, strong smoke-free legislation and other measures were introduced after 2001, compared to few meaningful policies before that time. Our aim was to assess whether tobacco control policy development in The Netherlands between 1988 and 2011 was associated with educational inequalities in smoking cessation and cigarette consumption.

Methods
Data were derived from the cross-sectional Dutch Continuous Survey of Smoking Habits, with a final sample of 259,140 respondents over a period of 24 years. The outcomes were the quit ratio and the mean number of cigarettes smoked per day. The developments in tobacco control policy were quantified by the Tobacco Control Scale (TCS). Multilevel logistic regression modelling was used, with individual, quarters, and years as three separate levels; controlling for sex, age and long-term trend. The periods of 1988-2000 and 2001-2011 were analyzed separately.

Results
A significant association between the TCS and smoking cessation was found in 2001-2011, but not in 1988-2000. Associations for low- and high-education groups were similar (OR: 1.23; 95% CI: 1.12-1.34 and OR: 1.17; 95% CI: 1.03-1.32 respectively). The TCS was not significantly associated with the number of cigarettes smoked per day for either the low- or high-education groups (B: −0.09; 95% CI: −0.46 -0.27 and B: −0.59; 95% CI: −1.24 -0.06 respectively).

Conclusions
The introduction of smoke-free laws, strong tax increases and public information campaigns between 2001 and 2011 were positively associated with national trends in smoking cessation, while the measures introduced between 1988 and 2000 were not. No change in educational inequalities as a result of the new policies was observed: the equity effect of the policies is neutral. However, it seems that the association of policy and smoking cessation in the low education group is strongest after two years, while in the high education group it is strongest after one year.

Key messages
- The introduction of strong tobacco control policies (smoke-free laws, tax increases and public information campaigns) is associated with a significant increase in smoking cessation.
- The low socio-economic status groups benefitted from the studied policies as much as high socio-economic status groups did.