SILNE Report Summary

Project ID: 278273
Funded under: FP7-HEALTH
Country: Netherlands

Final Report Summary - SILNE (Tackling socioeconomic inequalities in smoking: learning from natural experiments by time trend analyses and cross-national comparisons)

Executive Summary:
In all European countries smoking is increasingly concentrated in lower socioeconomic groups. Tackling inequalities in smoking is therefore vital to any strategy that is aimed at avoiding a further widening of socioeconomic inequalities in health.

Several effective interventions and programs are now available to address smoking in Europe, but it is yet uncertain which of these tobacco control measures could reduce socioeconomic inequalities in smoking. There is an urgent need for evaluations of interventions and programs that have already been implemented in Europe in practice. We aimed to assess effects of such real-world measures by analyzing “natural policy experiments”.

Europe offers a large number of “natural experiments” in the field of tobacco control. Since the 1990s, many European countries have intensified tobacco control policies and introduced measures such as bans on smoking in public places, and further tax increases. Similarly, at any moment in time, large differences exist between European countries in the type and extent of tobacco control measures that have been adopted.

The overall aim of the project was to analyse such “natural experiments” within Europe in order to generate new empirical evidence to inform strategies to reduce socioeconomic inequalities in smoking. These are the key findings:

Literature reviews showed that, where the equity impact of tobacco control policies have been assessed, most did not clearly diminish or widen inequalities in smoking. Inequalities were found to diminish under a few specific policies or actions (e.g. price policies, a British school program), and to increase under other policies (e.g. partial or regional smoke bans).

Among adults, some of the new tobacco control policies and campaigns that were introduced in European countries since 2000 were associated with a positive change in attitudes, intentions, or smoking cessation behaviour. Generally, lower and higher socioeconomic groups benefitted about equally. We rarely saw decreasing inequalities in smoking cessation due to the interventions that we studied.

Among adolescents, inequalities in smoking initiation are substantial among youth almost everywhere in Europe. They tended to increase since 2000. Despite their omnipresence, inequalities in smoking initiation are much larger in some European countries than in others. Various characteristics of countries were found to play a role, including the level of national tobacco control policies.

SILNE has started a new international survey on smoking among adolescents. A data base now includes information on 11,015 students from 50 schools in 6 countries, and about 57,094 relationships between these students. The risk of smoking increased with the number of smokers that a student had among his first, second or third-degree friends. Further analysis of these data will uncover how smoking inequalities already start in adolescence.
We conclude that future policies need to be designed to be especially effective in lower socioeconomic groups. There is evidence to support the development of equity-oriented strategies at both European, national and local levels, and to implement such policies at these different levels.

Project Context and Objectives:
In all European countries smoking is increasingly concentrated in lower socioeconomic (SES) groups, especially in the youngest generations. Tackling inequalities in smoking is therefore vital to any strategy that is aimed at avoiding a further widening of socioeconomic inequalities in health. Several effective interventions and programs are now available to address smoking in Europe. These include bans on smoking in public places and cessation support services for those wanting to quit. In addition, several supply-side measures are potentially effective, including bans on advertisements, increased tax on tobacco, and restrictions on sales of tobacco products to young people.

A main challenge for research is to assess which of these tobacco control measures have the potential to reduce socioeconomic inequalities in smoking, beside their impact on general smoking prevalence. The evidence accumulated so far is encouraging but limited. Unfortunately, much of this current evidence is derived from evaluations of controlled experiments in selective populations. There is therefore an urgent need for evaluations of policies, programs and interventions that have already been implemented at national or local levels. Evaluations of real-world actions may help to estimate more directly what has been achieved, and what can further be achieved in the field of tobacco control. We therefore aim to assess effects of such real-world policies by analyzing “natural policy experiments”.

The project took advantage of the fact that Europe offers a large number of natural experiments in the field of tobacco control. Since the 1990s, many European countries have intensified tobacco control policies and introduced measures such as bans on smoking in public places, and further tax increases. Similarly, at any moment in time, large differences exist between European countries in the type and extent of tobacco control measures that have been adopted. Both trends over time and variations between countries can be studied with the aim to obtain new evidence on the effectiveness of different types of tobacco control measures. We aimed to obtain such evidence both on smoking cessation by adult smokers, and on smoking initiation by young people.

The overall aim of the project was thus to analyse several “natural experiments” available within Europe in order to generate new empirical evidence to inform strategies to reduce socioeconomic inequalities in smoking. The project had three specific objectives:
1. to assess, using trend analysis for several European countries, whether changes in specific national tobacco control policies since 1990s were associated with changes in socioeconomic inequalities in smoking cessation and related factors;
2. to assess, through comparisons between European countries, whether differences in specific tobacco control policies and in educational systems are associated with differences in socioeconomic inequalities in smoking initiation and related factors;
3. to review the evidence of published intervention studies on their impact on socioeconomic inequalities in smoking, to integrate this with the evidence generated in the current project, and to disseminate the combined evidence across Europe.

Project Results:

PART 1. OVERALL SUMMARY OF RESULTS

Section 1.1. New studies on smoking cessation.

To address the first specific objective, WP2 and WP3 have completed a series of analyses with the aim to assess whether changes in specific national tobacco control policies were associated with changes in inequalities in smoking cessation. Both work packages have completed all the work planned.
WP2 aimed to utilize European data of the International Tobacco Control (ITC) Evaluation Project survey. This survey includes longitudinal data on smoking cessation and related factors that is comparable across six Western European countries. WP2 aimed to analyze these data using quasi-experimental methods. Seven papers have been completed and they all have been submitted or published in scientific journals. Key findings include:

1. Cross-border cigarette purchasing is more common in European regions bordering countries with lower cigarette prices and is more often reported by smokers with higher education and income.
2. A Dutch reimbursement policy was followed by an increase in quit attempts and quit success, but it did not seem to have decreased or increased socioeconomic inequalities in quit attempts, use of cessation treatment, or quit success.
3. Pictorial cigarette warning labels increased avoidance of cigarette packs among continuing smokers; they did not increase educational inequalities.
4. Noticing anti-tobacco information through the media was positively associated with attitudes towards smoking and quit intentions, among lower educated smokers as well as among higher educated.
5. Policy triggers to think about quitting smoking (higher cigarette price, smoking restrictions, free smoking cessation medication, and warning labels on cigarette packs) might act as a trigger to think about quitting for smokers with a low educational background and low income.
6. Ever trial of e-cigarettes was not associated with education or income. Current use of e-cigarettes was more often reported by smokers with high education compared to smokers with medium education.
7. The reach and impact of a Dutch television show about smoking cessation was largest among moderate educated smokers instead of high educated, but not among the lowest educated.

WP3 aimed to complement WP2 by analyses of smoking cessation in countries from different parts of Europe. This WP started with identifying specific changes in tobacco control policies (or “natural experiments”) of interest for their potential impact on smoking inequalities. Next, we obtained data from (inter)national health interview surveys with information on smoking in several years. Our specific aim was aim to describe trends in smoking cessation according to socioeconomic group before and after the occurrence of the “natural experiments”. Key findings include:

1. The implementation of smoke-free legislation in Spain and Italy had no substantial effect on inequalities in cessation, but may in the long run have increased smoking cessation rates among men.
2. Trends in smoking in Portugal have been less favourable to men and women from lower socioeconomic groups, although better-off women in this exceptional country are still more likely to smoke than worse-off women.
3. Improvements in tobacco control policies Lithuania, Latvia and Estonia were associated with an increase in long-term smoking cessation, among lower educated groups as well as among higher educated groups.
4. Radical changes in tobacco control legislation and cigarette affordability, as in Ukraine after 2007, may not only affect smoking cessation rates in the general population, but might also have had a larger effect among lower socioeconomic groups.
5. Strong tobacco control policies introduced in the Netherlands after 2000 were positively associated with national trends in smoking cessation, but do not seem to have either widened or narrowed educational inequalities in these rates.
6. Finally, in 11 western European countries socio-economic inequalities in smoking cessation rates had strongly increased during the 2000s, suggesting that tobacco control policies implemented during the 2000s have not been able to reduce such inequalities.

Section 1.2. New studies on youth smoking.

To address the second specific objective, WP4 has completed a series of analyses with the aim to make comparisons between countries in inequalities in youth smoking. WP5 has carried out a new survey with the aim to generate and analyse new comparative data. Both work packages have completed the work planned.
WP4 utilized data of the international HBSC survey. This survey includes data on smoking and related factors among adolescents 11-15 years in 38 European countries. WP4 analysed these data using comparative methods. Five papers were completed and they all have been submitted or published in scientific journals. Key findings include:

1. The relationship between smoking and adolescents’ socioeconomic status is stronger among girls (compared to boys) and in more affluent countries (compared to lower income countries).
2. Having more social capital decreases the adolescents’ chance to be smoking. Parent and school-related social capital seem to be protective, regardless of the adolescents' socioeconomic status. Socioeconomic inequalities in smoking can largely be explained by an unequal distribution of family and school-related factors, but not by peer-related factors.
3. Smoking across 29 European countries is unrelated to public place bans or advertising bans, but it is related to tobacco price and government spending. Among girls (but not boys) this association is stronger among those who are affluent, thus suggesting that some tobacco control policies may have contributed to inequalities in smoking.
4. Countries with a higher degree of educational differentiation (i.e. early and long tracking to different school types) do not have larger inequalities in adolescent smoking. This finding is contrary to our hypothesis.

In WP5, we have designed and implemented a new survey on smoking among 16 year old school pupils in six European countries (Finland, Germany, Belgium, Italy, Portugal and The Netherlands). The survey is especially aimed to facilitate social network analyses of smoking in a parallel way in different countries. We first prepared and administered the surveys, and then we completed and cleaned a data base that includes 11,015 adolescents in 50 schools, with information on 57,094 peer relationships. A first series of analyses of these data yielded the following findings:

1. Peer-effects are marked: the risk of smoking increased with the number of smokers a adolescents had among his first, second or third-degree friends. The contribution of peer effect on smoking socio-economic inequalities was substantial.
2. School smoking policies were not associated with the prevalence of daily smoking of students, but they were associated with smoking on school premises. There was no evidence for a differential effect of school policies between socioeconomic groups.
3. A descriptive social norm (i.e. the estimated prevalence of smoking at schools) was more favourable among adolescents of high educational groups. This descriptive norm also varied substantially between schools and between countries.
4. The association between parental smoking and youth smoking was stronger in families with high-educated parents, suggesting that policies should target families.
5. Smoking was very strongly related to lack of school engagement, school burnout and low academic achievement. This association varied between the six countries.

Section 1.3. Results from reviews

To address the third specific objective, WP6 reviewed the evidence of all published intervention studies. The team systematically searched among different literature databases for studies published since 1995. The results of selected studies were processed using a systematic approach to evaluation and reporting. Three extensive background reports were written in the first half of the project, and syntheses of these results were prepared in the second half. Key conclusions were:

1. Very few studies have assessed the equity impact of policies and interventions on smoking among youth.
2. Several studies were identified on population-level interventions on adult smoking. The clearest consistent evidence of a positive equity impact was for price/tax increases.
3. Individual-level cessation services are likely to increase inequalities in smoking unless they are targeted at low SES smokers.

Section 1.4. Conclusion and disseminations

The project provided evidence on the differential health behaviour effects of policy interventions, and the impact of alternative options for enhancing socioeconomic equity in health. Because of its focus on smoking, the project was able to provide new
evidence on the differential effect of tobacco control policies on various socioeconomic groups, thereby offering direct input to an important field of public health action. By applying innovative methods to mostly existing data bases, it was able to generate much new empirical evidence on how tobacco control policies affected inequalities in smoking.

The consortium put much effort into disseminating the new results to the scientific community and related professionals through various channels (conferences, journals, training researchers). In WP7, several dissemination activities were carried out, including the maintenance of the project website and newsletters for a network of interested stakeholders. We organised many presentations at scientific conferences, including two special workshops, and we submitted papers to international journals (up to now 26 papers). A closing conference was held on 8 December 2014 at the European Parliament in Brussels. The consortium will continue to disseminate its findings in 2015.

PART 2. RESULTS FROM WORK PACKAGE 1 (COORDINATION)

In collaboration with other work packages, we prepared data on trends in tobacco control in all European countries, and we reported on the results in two papers on tobacco control policies in Europe. The key results were presented in two papers.

Paper 1. tobacco control policy development. Development of tobacco control policies has not been the same across different European countries, We aimed to assess which patterns can be identified across Europe over time. We observed that progress in tobacco control policy development in Europe over the past decade can be characterized by three distinct components. These components show that most progress can be attributed to just one component (incl. smoke-free policies and other bans). Achieving progress in the other policy components (e.g. price, cessation services) should remain a priority.

Paper 2: the role of political factors. Not much is known about the political factors that shape variations between countries in tobacco control. We aimed to assess their role among 11 European countries from 1996 through 2010. We observed that national political factors have had only a minor influence on the large variations in tobacco control policy development. However, there are indications that left-wing governments were important for early adoption of tobacco control policy. However, since 2002, with the advent of international treaties, the influence of national politics has diminished.

PART 3. RESULTS FROM WORK PACKAGE 2 (THE ITC STUDY)

The ultimate objective of this work package was to assess the impact of specific tobacco control policies on trends in smoking cessation, and to assess whether this impact varies according to socioeconomic group. Data were used of the ITC survey. The results of this work were planned to be presented in four papers. The actual achievement surpassed this goal by far. By the formal end of the project, the team has written seven papers related to the objectives of this work package.

Paper 1. Cross-border cigarette purchasing. Little is known about socioeconomic and country variations in cross-border purchasing. We aimed to describe socioeconomic and country variations in cross-border cigarette purchasing in six European countries. We found that cross-border cigarette purchasing is more common in European regions bordering countries with lower cigarette prices and is more often reported by smokers with higher education and income. Increasing taxes in countries with lower cigarette prices, and reducing the number of cigarettes that can be legally imported across borders could help to avoid cross-border purchasing.

Paper 2: the impact of a national reimbursement policy for smoking cessation treatment. We aimed to examine possible income differences in the impact of a national reimbursement policy for smoking cessation treatment and accompanying media attention in the Netherlands in 2011. We found that the Dutch reimbursement policy with accompanying media attention was followed by an increase in quit attempts and quit success. The policy did not seem to have decreased or increased socioeconomic inequalities in quit attempts, use of cessation treatment, or quit success.
Paper 3: the impact of pictorial cigarette warning labels. We aimed to examine educational differences in the ways in which smokers respond to pictorial cigarette warning labels (in terms of warning salience, cognitive responses, forgoing cigarettes, and avoiding warnings). We observed that the labels did not increase educational inequalities among continuing smokers. We concluded that the warning labels implemented in France in 2010 and in the UK in 2008 with pictures on one side of the cigarette package did not succeed in increasing warning salience, but did increase avoidance.

Paper 4: the impact of noticing anti-tobacco information. We aimed to examine educational differences in the associations of noticing anti-tobacco information with attitudes towards smoking and quit intentions among adult smokers. We observed that noticing anti-tobacco information was positively associated with attitudes towards smoking and quit intentions. Among smokers without a quit intention, noticing anti-tobacco information was also associated with quit intention at follow-up. Lower educated smokers were as likely to be influenced by anti-tobacco information as higher educated. Increasing reach of anti-tobacco information among people with a low educational level may therefore increase impact in this group.

Paper 5: policy triggers to think about quitting smoking. Tobacco control policies can trigger smokers to think about quitting. We aimed to investigate socio-economic differences and trends in policy triggers to think about quitting in six European countries. We studied four different policies: cigarette price, smoking restrictions in public places, free or lower cost medication, and warning labels on cigarette packs. We found that all these policies might have the potential to work as a trigger to think about quitting for smokers with a low educational background and low income. Especially cigarette price might be important in decreasing socio-economic differences in smoking.

Paper 6: reasons for use of electronic cigarettes among smokers. We aimed to assess how smokers in the Netherlands respond to electronic cigarettes. We found that E-cigarettes are increasingly used by Dutch smokers. Commonly endorsed motivations for current e-cigarette use were to reduce tobacco smoking and because e-cigarettes are considered to be less harmful than tobacco cigarettes. Ever trial of e-cigarettes was not associated with education or income. Current use of e-cigarettes was more often reported by smokers with high education compared to smokers with medium education.

Paper 7: a television show about smoking cessation. We evaluated whether an entertainment-education television show刺激了 smoking cessation. We observed that the reach of this show, and its effect on quit attempts, was larger among moderate educated smokers. The entertainment-education strategy for smoking cessation television programs should be further refined. This can possible lead to a program that has positive effects on the quit intention, self-efficacy, quit attempts and the quit success of low and moderate educated smokers.

PART 4. RESULTS FROM WORK PACKAGE 3 (TRENDS IN SMOKING CESSATION)

The ultimate objective of this work package was to assess the impact of specific tobacco control policies on trends in smoking cessation, and to assess whether this impact varied according to socioeconomic group. As a complement to the ITC survey, data were used from continuous health surveys covering both the 1990s and 2000’s. According to Annex 1, the work would be carried out by four partners representing, respectively, Spain, Italy, the Baltic countries and Eastern Europe (especially Poland and Ukraine). In order to broaden the evidence base, we had decided to include more countries (the Netherlands and Portugal) and to utilise data from international surveys (the Eurobarometer surveys). The combined work resulted in 11 papers.

Paper 1: The Netherlands. We aimed 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. We found that strong tobacco control policies introduced in the Netherlands after 2000 were positively associated with national trends in smoking cessation, whereas weaker policies introduced gradually before 2000 were not. These measures do not seem to have either widened or narrowed educational inequalities in smoking cessation rates - both groups benefitted about equally.
Paper 2: Spain. We aimed to evaluate the effect of tobacco prices and the introduction of smoke-free legislation on smoking cessation rates in Spain, by educational level, across the period 1993-2012. We did not observe the trends that we would expect. The rise in tobacco prices was not associated with an increase in smoking cessation. The implementation of smoke-free legislation was followed by a slower increase in smoking cessation rates than before, except among men with a high educational level.

Paper 3: Italy. We aimed to assess whether the effect of Italian smoking ban of 2005 differed not only between socio-economic groups, but also between individuals that were differentially exposed to the new law. We observed that the Italian smoking ban was associated with increased cessation among high-educated in the long term and low-educated females in the short term. We also observed increased post-ban rates in smoking cessation among males participating in disco/concert; this suggested that smoke-free policies may have encouraged smokers to quit.

Paper 4: Portugal. We aimed to investigate whether the general evolution in smoking inequalities that is observed in southern European countries also applied to Portugal. We analysed trends between 1987 and 2006. We observed that inequalities have been increasingly less favourable to the worse-off in Portugal, even though better-off women are still more likely to smoke than worse-off women. Worrisome inequality trends have been observed among the youngest generations, which call for the rapid implementation of equity-oriented tobacco control policies.

Paper 5: Lithuania. We aimed to evaluate the association between tobacco control policies and trends in smoking cessation according to gender, age and educational level in Lithuania in 1994-2010. We observed that the improvement in Lithuanian tobacco control policies was associated with an increase in long-term smoking cessation. These policies have not only benefitted highly educated groups, but lower educated groups as well. Nonetheless, further development of comprehensive tobacco control policies is needed in order to decrease social inequalities in smoking cessation.

Paper 6: The Baltic countries. We aimed to analyse the development of tobacco control policies in the Baltic countries, and to evaluate how these were related to trends in smoking cessation in 1998 – 2008. We observed that the progress in tobacco control policies was associated with an increase of smoking cessation. In Latvia, but not in the other countries, this association was stronger among women than men. No difference according to educational level was observed in any of the Baltic countries, implying that this progress in tobacco control had not widened the inequalities in smoking cessation.

Paper 7: Poland and Ukraine. We aimed to examine the trends in smoking cessation in different socioeconomic groups in 1998–2010 in Poland and Ukraine in relation to tobacco control policies. We found that socioeconomic inequalities in smoking cessation increased or remained the same in Poland but narrowed in Ukraine. The results suggest that radical changes in tobacco control legislation and cigarette affordability, as in Ukraine after 2007, may not only affect smoking cessation rates in the general population, but may also have a larger effect among lower socioeconomic groups.

Paper 8: Stakhanov, Ukraine, 2009. The 2007 tobacco excise tax increase and economic crisis reduced cigarette affordability in Ukraine dramatically. We aimed to examine whether socio-economic status was associated with the continuation of smoking in this environment in 2009. Low education (in women) and ownership of household assets (in men) were negatively associated with smoking continuation, whereas a positive association was found for personal monthly income. Our findings suggest that in a low-income setting where efficient cessation services are absent, reduced cigarette affordability may have only a limited effect in cutting down smoking.

Paper 9: Trends in 11 European countries. After the 1990s, many tobacco control policies have been implemented. Yet, European overviews of more recent trends in smoking inequalities were lacking. This paper aimed to provide such an overview. We observed that socio-economic inequalities in smoking cessation rates had strongly increased since the 1990s and during the 2000s. This suggests that the tobacco control policies implemented during the 2000s have not been able to counter the trend in increasing inequalities.
Paper 10: Smoking inequalities in 27 European countries. Previous research had shown that national tobacco control policies were positively related to national smoking cessation rates. We aimed to assess if this association persisted across 27 European countries in 2006, 2009 and 2012. We were not able to replicate the previously reported association between national-level tobacco control policy and smoking behaviour. There however was some evidence for an association among the high educated, suggesting a negative equity impact. This could have contributed to rising inequalities in smoking cessation throughout Europe during the 2000’s.

Paper 11: Electronic nicotine delivery systems (ENDS). The aim of this paper was to assess which socio-demographic characteristics were associated with ENDS harm perception, ever-use, and use as a cessation tool in the European Union. We analyzed data from the 2012 Eurobarometer for all 27 member states. We observed that ever-use of ENDS was low in the European population in general, but that younger people and those with a high education use ENDS more frequently and have lower harm perceptions. These results indicate a need for more appropriate product information targeted at these groups.

PART 4: RESULTS FROM WORK PACKAGE 5 (THE HBSC SURVEY)

This work package aimed to perform a series of cross-national comparisons based on the HBSC survey data for up to 38 countries. The ultimate objective of the analyses was to assess whether inequalities in youth smoking were associated with national tobacco control policies and with the type of educational system. The results of this work were planned to be presented in four papers. By the end of the project, we completed and submitted six papers for international journals, thus one more than originally planned. In addition, we had the opportunity to work with the international ESPAD data, which resulted in an additional two papers (papers 6 and 7).

Paper 1: Family affluence and smoking across 35 European countries. We aimed to examine how national wealth affects the association between family affluence and adolescent smoking (early smoking behaviour and weekly smoking). We found that higher national wealth was accompanied by a stronger relationship between family affluence and current weekly smoking. Thus, the difference in smoking prevalence between rich and poor is greater in more affluent countries.

Paper 2: The role of social capital within 4 countries. We aimed to estimate how different dimensions of individual-level social capital were associated to adolescent smoking. We found that different types of social capital decreased probabilities of adolescent smoking, except for social capital via friends. The findings underscored that dimensions of social capital seem to protect adolescents from smoking, regardless of adolescents’ socioeconomic status.

Paper 3: The role of family, school and peers within 35 countries. We aimed to investigate the mechanisms leading to socioeconomic inequalities in smoking among 15-year-old adolescents by examining the mediating role of psychosocial factors in the peer group, family and school environment. We found that these inequalities can largely be explained by an unequal distribution of family and school-related factors. Focusing on the parent-adolescent relationship and adolescent school achievement can help to better understand inequalities in adolescent smoking behaviour.

Paper 4: The impact of tobacco control policies across 29 European countries. We aimed to examine the association between tobacco control policies and weekly smoking across 29 European countries. We found that smoking bans, advertising bans and health warnings were not related to smoking. We did find an association of smoking with tobacco price and government spending on tobacco control. This association varied by FAS among girls, but not among boys. These findings suggest that some tobacco control policies in Europe may have contributed to socioeconomic inequalities in smoking in girls, but not in boys.

Paper 5: The impact of educational differentiation across 27 European countries. We aimed to assess whether higher degrees
of educational differentiation (i.e. early and long tracking to different school types) are associated with greater socioeconomic inequalities in adolescent smoking. Contrary to our expectations, we found that stronger educational differentiation is not associated with greater relative inequalities in smoking. Features of educational systems are important to consider as they are related to overall prevalence in smoking and smoking inequalities in adolescence.

Paper 6 (ESPAD): Tobacco control policies and inequalities in adolescent smoking in 13 countries. We aimed to examine the association between tobacco control policies and adolescent smoking, and investigate the differences in this association between adolescents of high and low socioeconomic position (SEP). We found that countries with stronger tobacco control policies tended to have lower smoking rates. We were unable to demonstrate significant socioeconomic inequalities in the effect of tobacco control policies on adolescent smoking.

Paper 7 (ESPAD): Evaluation of laws prohibiting the sale of tobacco to minors. We aimed to evaluate the effect of age restrictions on adolescent smoking and the obtainability of cigarettes in the EU, using a case-control time trend study design. We also examined potential differences in effect between high and low socioeconomic status (SES) groups. We found that laws prohibiting the sale of tobacco to minors seem to make the obtainment of cigarettes more difficult and may have reduced the growth in socioeconomic inequalities in adolescent smoking.

PART 6. RESULTS OF WORK PACKAGE 5 (NEW SURVEY OF 16 YEAR OLDS)

This work package faced the challenge to develop and carry out a new survey among 16 year old pupils within six European countries. In addition, by using the data generated by this survey, this work package would perform analyses with the aim to better understand socioeconomic inequalities in smoking, and international variations therein. Special attention would be given to smoking within social network of peers. The work package has been successful in completing the survey field work and data entry and cleaning.

The resulting data base is the primary foreground of this work package. The data base includes information on 11,015 adolescents from 50 schools in 6 countries. The data include detailed description of socioeconomic factors and smoking-related information. Moreover, the social network of each respondent was mapped, and we were able to identify 57,094 relationships among the respondents included in the survey. Finally, we obtained detailed information on each of the 50 schools participating in the study. This data base will offer the opportunity for many comparative analysis of smoking of adolescents.

The new data base has been used to perform a series of analyses that together address the objectives of this work packages. The results are summarised below.

Paper 1. Design and validation of a social network survey. The aim of this paper was to describe the SILNE survey. We outline how this survey was designed to test the hypothesis that peer effects, social networks and school context together explain how smoking inequalities are formed at school settings. The survey was carried out in 2013 in six medium-size European cities. The survey collected information from 11,015 adolescents in 50 schools from a total of 13,870 registered pupils. SILNE yielded information on 57,094 social ties or relationships. We conclude that the SILNE survey provided a comparable database for the study of smoking inequalities across European cities.

Paper 2. Smoking Inequalities in adolescents and the role social networks. We aimed to test two hypotheses: (1) socio-economic inequalities in smoking result from peer exposure at school and (2) this contribution of such peer exposure depends on the school context. We found that pupils from lower socio-economic groups were more likely to smoke and to be nicotine dependent. We found strong evidence of peer-effect: the risk of smoking increased with the number of smokers a adolescents had among his first, second or third-degree friends. Yet, the contribution of these peer-effects to smoking socio-economic
inequalities was modest. However, at the school-level, we found evidence that smoking inequalities were bigger in the schools with stronger clustering of smoking within networks.

Paper 3. The role of school smoking policies. This study aimed to examine the associations between school smoking policies and smoking behaviour among 14 to 17 year old adolescents and to identify potential inequalities in these associations between educational groups. The results suggested that school smoking policies may not affect the daily smoking of students but that they may reduce the prevalence of smoking on school premises. We did not find evidence for a differential effect of school policies between educational groups.

Paper 4. Perceived prevalence of smoking at schools. The main aim of this study was to describe educational differences in the perceived prevalence of smoking at schools. The secondary aim was to estimate the contribution of the individual, school and country level to variations in this norm. We found a lower perceived smoking prevalence among adolescents of high educational groups. Though this descriptive norm mostly varies at the individual-level, a significant part of the variation is attributable to the school and country-level.

Paper 5. The role of future life expectations. Theories postulate that risky lifestyles are related to future expectations and time preferences. We aimed to test the hypothesis that low expectations about future life and health are related to increased likelihood of smoking. We observed patterns that opposite to our expectations: adolescents with higher life expectations were more likely to experiment smoking and smoke regularly. This result calls for an approach on smoking prevention that is less focused on the dangers of smoking, but more on the transition between experimentation, regular smoking and addiction.

Paper 6. Intergenerational transmission of smoking. Exposure to parental smoking is associated with smoking in adolescence. This study aimed to test whether this relationship depended on factors such as socioeconomic background, norms and rules at home, and family bonds. We observed that this association was stronger in same-sex parent-child relationships, among traditional families, and in families with high-educated parents. The variation of intergenerational transmission according to family structure and the educational background highlights that transmission is not a fatality that hits regardless of time and context.

Paper 7. Academic wellbeing, school performance and smoking. We aimed to study how daily smoking is associated with school burnout, schoolwork engagement and academic achievement of adolescents. We observed that a high level of school burnout, low level of schoolwork engagement and low school performance were strong and independent risk factors for smoking. The strength of the associations varied between countries, but the main patterns was similar across countries. Low academic achievement had a much stronger association with daily smoking in Finland than in the other countries.

**PART 7. RESULTS OF WORK PACKAGE 6 (REVIEW AND SYNTHESIS)**

The objective of this work package was to review the published evidence on the effectiveness of tobacco control measures among adolescents and adults in lower as compared to higher socioeconomic groups. At the start of the project, we concluded that the entire literature could be covered by three complementary reviews. All reviews were completed and published as paper in international journals.

Paper 1: Youth smoking. Very few studies have assessed the equity impact of policies and interventions on smoking prevention or cessation in youth. Overall there was no consistent equity effect for each type of policy/intervention. Most interventions had, on balance, either a neutral equity impact (16 studies) or increased inequality in smoking (12 studies). Only 7 of the 40 population level prevention studies showed the potential to produce a positive equity impact (i.e. to reduce inequality). Thus there seems yet little available evidence to inform tobacco control policy and interventions that are aimed at reducing
socioeconomic inequalities in youth smoking.

Paper 2: Population-level interventions on adult smoking. We identified 117 studies which evaluated 130 interventions/policies. The equity impacts of the 130 included interventions/policies were: 33 positive (i.e. reducing inequalities), 36 neutral, 38 negative (i.e. increasing inequalities), 6 mixed and 17 unclear. Most of neutral equity impact studies showed similar beneficial impacts for all SES groups. Thus, only limited conclusions can be drawn about which types of tobacco control interventions are likely to reduce inequalities in smoking. The clearest and most consistent evidence of a positive equity impact was for price/tax increases.

Paper 3: Individual cessation support interventions delivered in European countries. We identified 29 studies on the effectiveness of individual cessation support interventions to reduce inequalities in smoking cessation. Most interventions (62%) had a negative equity impact and a third (34%) had a neutral equity impact (mostly with equal benefits for all SES groups). A consistent positive equity impact was observed only from several evaluations on the targeted smoking cessation services in the UK. To conclude, when smoking cessation services in Europe are not targeted at low SES groups, they are likely to increase inequalities smoking cessation.

Potential Impact:

The issue of health inequalities stands high on the agenda of European organisations as well as many national organisations. One of the biggest challenges regarding health inequalities in Europe was the lack of direct evidence on the effects of national policies on health determinants such as smoking. The results of the SILNE were a main step forwards in filling in this gap in information, especially when it comes to tobacco control programs and policies. Below, we present the key results of the project and the main implications that derive from these results.

The Literature reviews (WP 6). Key findings: These reviews showed that, where the equity impact of tobacco control policies have been assessed, most did not clearly diminish or widen inequalities in smoking. Inequalities were found to diminish under a few specific policies or actions (e.g. price policies, a British school program), and to increase under other policies (e.g. partial or regional smoke bans). Implications: Untargeted smoking cessation interventions are likely to have increased inequalities in smoking. Yet, some policies have a demonstrated potential to reduce inequalities in smoking.

Studies of inequalities in smoking initiation (WP 4 and 5). Key findings: These inequalities are substantial among youth almost everywhere in Europe. They tended to increase since 2000. Despite their omnipresence, inequalities in smoking initiation are much larger in some European countries than in others. Various characteristics of countries were found to play a role, including the level of national tobacco control policies. Implications: Future policies need to be designed to be especially effective in lower socioeconomic groups. There is evidence to support the development of equity-oriented strategies at both European, national and local levels.

Studies of inequalities in smoking cessation (WP 2 and 3). Key findings: Some of the new tobacco control policies and campaigns that were introduced in European countries since 2000 were associated with a positive change in attitudes, intentions, or smoking cessation behavior. Generally, lower and higher socioeconomic groups benefitted about equally. We rarely saw decreasing inequalities in smoking cessation due to the interventions that we studied. Implications: Thus, it seems that tobacco control policies and campaigns may not decrease inequalities by accident, but that they need to be designed for this specifically. Concerns for equity should inform discussions on different issues, including ENDS and ‘end-game’ strategies.

In the many papers that have been produced in the SILNE project, societal implications of the project results have been elaborated in more detail. Some papers also address the implications for other policies than tobacco control. For example, paper 5 of WP 4 addressed the role of educational systems and concluded that these systems are important to consider
because they are related both to the overall prevalence of youth smoking and to inequalities therein.

**DISSEMINATION TO SCIENTIFIC COMMUNITY AND HEALTH PROFESSIONALS**

The consortium disseminated the project results to the scientific community and related professionals through various channels:

1. **Scientific publications.** We published in the most relevant peer-reviewed scientific journals, in the field of tobacco control, public health, epidemiology, health psychology, and medical sociology. According to Annex 1, we expected to publish at least 20 papers in total. This promise has been more than realized. By the end of the project, we have prepared 37 papers. A list of these papers is given in the Appendix. As per February 2015, about 10 papers were published in international scientific journals, about 7 papers were accepted for publication, about 7 papers were submitted for publication, and about 12 papers are in draft form.

   We aim to include open access journals in order to ensure the widest dissemination of peer-reviewed published results among the scientific community. Several papers that are now accepted for publication will appear in open access journals. Some of the papers that have been published in ‘closed’ journals will be ‘freed’ for open access after a number of years.

2. **International scientific conferences.** We have presented interim or final results at the annual meetings of the European Public Health Association (EPHA, in Glasgow in November 2014), the European Conference on Tobacco or Health (ECTOH, in Istanbul in March 2014), and many conferences at national and global levels. We refer to the second periodic report for an overview of the many presentations given by individual participants.

   The SILNE consortium has organized specialized workshops at international or national conferences. A general overview of the SILNE project was presented during a workshop of the 2014 ECTOH attended by over 100 participants. The new SILNE survey was presented at a special workshop of the 2014 EPHA conference attended by over 50 participants. Finally, together with partners of three “sister” projects, we co-organised a pre-conference on health inequalities to the 2014 EPHA conference.

3. **Involvement of the ITC and HBSC networks.** The methods and results of the SILNE project were actively disseminated to ITC and HBSC network members, with the particular aim to encourage future comparative studies in the field of socioeconomic inequalities in health. For example, the coordinator presented the SILNE study at a plenary session of the annual meeting of the HBSC network in Slovakia, October 2012.

   Members of these networks were also involved through active co-authorships to the many papers that were written by the teams of WP2 (ITC) and WP4 (HBSC). Taken together, the different papers resulting from the ITC work package were co-authored by more than 10 non-Dutch partners in the ITC network. Similarly, take together, the HBSC papers were co-authored by more than 10 non-German partners in the HBSC network.

4. **Training of young researchers.** Because partners were employed at universities and had educational tasks, they were able to incorporate methods and results of the SILNE project in student training activities. Moreover, in total 9 PhD students were employed at least a substantial part of their time in the SILNE project. In 2013, the coordinating centre in Amsterdam had received a PhD student from one project partners (Madrid) to obtain experience with comparative research. Finally, the leaders of WP1, 4 and 5 organised a meeting in Halle (Germany) in June 2014 with the specific aim to give young researchers the opportunity to discuss in-depth methods of survey research and social network analysis.

5. **Web site.** The leader of WP7 had built a web site to communicate the research methods to the larger scientific community
as well as to policy makers and professionals. The web site had a public access area where all public deliverables will be accessible to the general scientific community.

DISSEMINATION TO POLICY MAKERS AND THE GENERAL PUBLIC

We realised that tailored information was needed in order to be able to disseminate the project results to policy makers, professionals as well as general public. Moreover, we recognised that, even though policy makers could be reached through the scientific meetings listed above, they should also be reached through complementary channels. These other channels were as follows:

1. Written and broadcasting media. Consortium members had actively sought opportunities for interviews and for the provision of in-depth information to different media. For example, in the Netherlands, the results of two published papers were covered by national newspapers (including the largest newspaper of the country). Some partners had actively used social media such as Twitter to increase media coverage.

2. Tobacco control organisations. We had made efforts to involve organizations at international and national levels. Stakeholders could be identified by the ENSP thanks to its central position among tobacco control networks and organizations within Europe. A meeting with about 20 interested stakeholders was organised in Athens, June 2013, with the specific aim to get their advice, and to discuss how to tackle smoking in disadvantaged socioeconomic groups.

3. Other health organizations. The activities mentioned above also apply to other health organisations. A few complementary actions were taken. For example, the general medical profession in the Netherlands was reached through short publications in the Dutch Medical Journal (NTVG) summarising three SILNE papers that we published in international journals. Stakeholders interested in promoting equity in health among young people were also informed through the HBSC network.

4. Conference meeting. We organised a dissemination meeting at the European Parliament in Brussels in December 2014. The consortium presented its results and recommendations to policy makers, professionals and representatives of European stakeholder organizations. A report on this conference is available as a deliverable to WP7.

DISSEMINATION IN 2015 ONWARDS

We fully recognize that the dissemination of project results does not stop with the formal end of the project. Our plan for dissemination in 2015 includes the following elements:

Scientific publications. We will endeavour to publish all 37 papers that are listed in the Appendix. Virtually all these papers are meant to be published in international scientific journals, including open access journals.

Presentations at scientific meetings. As many of the project results have been obtained as recent as in 2014, we still wish to present this new evidence at scientific meetings. For example, different members of the consortium will give poster and oral presentations of SILNE results at forthcoming meeting in the field of tobacco control (SRNT Philadelphia February 2015, WCTOH Abu Dhabi March 2015, SRNT-E Philadelphia Maastricht August 2015). The project coordinator presented the SILNE project methodology and results at a keynote lecture to a French national congress on tobacco research, organised in Paris, January 2015.
Media attention. Every new publications of a paper will present new opportunities for getting the attention of written and broadcasting media. We plan to seize these opportunities to increase media coverage of SILNE results.

Project website. The ENSP will maintain the SILNE website in the forthcoming years and use this website to publish information on inequalities in smoking. A fourth newsletter was published in February 2015.

APPENDIX: OVERVIEW OF SILNE SCIENTIFIC PAPERS

SMOKING AMONG ADULTS

WP 2: ITC project

1. Socioeconomic and country variations in cross-border cigarette purchasing as tobacco tax avoidance strategy; 6 EU countries

2. Income differences in the impact of a national reimbursement policy for smoking cessation treatment; The Netherlands
Nagelhout GE, Hummel K, Willemsen MC, Siahpush M, Kunst AE, de Vries H, Fong GT, van den Putte B.
Drug Alcohol Depend. 2014 Jul 1;140:183-90

3. Educational differences in the impact of pictorial cigarette warning labels on smokers; 4 EU countries
Submitted for publication

4. Educational differences in associations of noticing anti-tobacco information with smoking-related attitudes and quit intentions; 6 EU countries
Submitted for publication

5. Education and income differences in policy triggers to think about quitting smoking; 6 EU countries
Submitted for publication

6. Prevalence and reasons for use of electronic cigarettes among smokers; The Netherlands
Submitted for publication

7. Reach and effectiveness of a television show about smoking cessation among low, moderate, and high educated smokers; The Netherlands
Nagelhout GE, Wiebing MA, van den Putte B, de Vries H, Crone M, Bot SM, Willemsen MC.
Tijdschrift voor Gezondheidswetenschappen, 92, 84-92.

WP 3: Studies on national trends in smoking cessation

8. The association between tobacco control policy and educational inequalities in smoking cessation: Netherlands, 1988-2011
Bosdriesz JR, Nagelhout GE, Stronks K, Willemsen MC, Kunst AE.
Submitted for publication
9. Impact of tobacco prices and smoke-free policy on cessation of smoking, by educational group: Spain, 1993-2012
Regidor E, Kunst AE.
Submitted for publication

Alves J, Kunst AE, Perelman J.
Submitted for publication

11. Did the Italian smoke-free policy of 2006 have a heterogeneous impact on smoking cessation?
Federico B, Silvestrini G, Kunst AE.
Draft version

Klumbiene J, Sakyte E, Petkeviciene J, Prattala R, Kunst AE.
Submitted for publication

13. Tobacco control policies and smoking cessation: the Baltic countries, 1998-2008
Draft version

14. Tobacco control policies and socioeconomic inequalities in smoking cessation: Poland and Ukraine, 1998–2010
Leinsalu M, Rajaleid K, Kaleta D, Krasovsky K, Kunst AE.
Draft version

15. Reduced affordability of cigarettes and socio-economic inequalities in smoking continuation: Stakhanov, Ukraine, 2009
Leinsalu M, Stickley A, Kunst AE.

WP 6: Systematic reviews

16. Equity impact of population-level interventions and policies to reduce smoking in adults: a systematic review.
Brown T, Platt S, Amos A.
Drug Alcohol Depend. 2014 May 1;138:7-16.

17. Equity impact of European individual-level smoking cessation interventions to reduce smoking in adults: a systematic review.
Brown T, Platt S, Amos A.

Extra: Analyses of Eurobarometer surveys

Bosdriesz JR, Willemsen MC, Stronks K, Kunst AE.
Submitted for publication

Bosdriesz JR, Willemsen MC, Stronks K, Kunst AE.
Draft version

20. Socioeconomic differences in harm perception and use of electronic nicotine delivery systems (ENDS) in Europe, 2012
Ooms GI, Bosdriesz JR, Portrait FRM, Kunst AE.
Submitted for publication

YOUTH SMOKING

WP 4: HBSC study
21. The association between family affluence and smoking among 15-year-old adolescents: the role of national wealth (33 countries)
Pförtner TK, Moor I, Rathmann K, Hublet A, Molcho M, Kunst AE, Richter M.
Addiction. 2014 Sep 15.

22. Smoking and socioeconomic inequalities in smoking among adolescents: the role of social capital (5 countries)
Submitted for publication

23. Socioeconomic inequalities in adolescent smoking: the role of family, school and peers (35 countries)
Submitted for publication

24. Socioeconomic inequalities in the impact of tobacco control policies on adolescent smoking (29 countries)
Submitted for publication

25. Is educational differentiation associated with smoking and smoking inequalities in adolescence? (27 countries)
Submitted for publication

WP 5: new SILNE survey

26. Smoking in school-age adolescents: design and validation of a social network survey in six European cities
Submitted for publication

27. Smoking Inequalities in school-aged adolescents: in 6 European cities
Lorant V, Soto Rojas VE, the SILNE survey team.
Draft version

28. Smoking behavior, future life expectations, and socioeconomic inequalities: 6 European cities
Alves J, Perelman J, the SILNE survey team.
Draft version

29. Is intergenerational transmission of smoking unavoidable? 6 European cities
Alves J, Perelman J, the SILNE survey team.
Draft version

30. School smoking policies and educational inequalities in smoking behaviour among 14 to 17 year old adolescents in Europe
Submitted for publication

31. De-normalisation of smoking in European adolescents: mapping the descriptive social norm in a multilevel approach
Kuipers MAG, Kunst AE, the SILNE survey team.
Draft version

32. Schoolwork orientation and performance: study on smoking in six European countries
Kinnunen JM, Lindfors P, Rimpelä A, the SILNE survey team.
Draft version

WP 6: systematic reviews

33. Equity impact of interventions and policies to reduce smoking in youth: systematic review.
Brown T, Platt S, Amos A.
Extra: Analyses of ESPAD surveys

Kuipers MAG, Monshouwer K, van Laar M, Stronks K, Kunst AE.
Submitted for publication
Brandhof S, Kuipers MAG, Monshouwer K, Kunst AE.
Draft version

BACKGROUND PAPERS

WP 1: tobacco control policies
Bosdriesz JR, Willemsen MC, Stronks K, Kunst AE.
Draft version
Tobacco control policy development in the European Union: do political factor matter?
Bosdriesz JR, Willemsen MC, Stronks K, Kunst AE.
Accepted for publication

Related information

<table>
<thead>
<tr>
<th>Result In Brief</th>
<th>Smoking research to help Europeans kick the habit</th>
</tr>
</thead>
</table>

Reported by

Academisch Medisch Centrum bij de Universiteit van Amsterdam
Netherlands

Subjects

Life Sciences

Last updated on 2015-06-01
Retrieved on 2019-08-20

© European Union, 2019