Plain tobacco packaging, increased graphic health warnings and adolescents' perceptions and initiation of smoking: DePICT, a French nationwide study

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ABSTRACT

Background Plain packaging (PP) of tobacco products and increased graphic warnings may contribute to lower attractiveness of smoking, particularly among youths. In France, this policy was introduced on 1 January 2017. We examined changes in smoking-related perceptions and behaviours among a nationwide sample of French adolescents before (2016) and 1 year post (2017) implementation.

Methods DePICT is a two-wave cross-sectional national telephone survey of adolescents aged 12–17 years per study wave (2016: n=2046 2017: n=1999). All participants reported smoking-related perceptions, as well as ever and current tobacco use. Smokers were also asked about their perceptions of tobacco brands. Data were weighted to be representative of youths in the French population: adjusted prevalence ratios (PRs, 95% CI) estimating changes between the two study waves were calculated using multivariate log-binomial regression models.

Results In 2017, as compared with 2016, French adolescents were more likely to report fear of the consequences of smoking (PR=1.06, 95% CI 1.02 to 1.09) and that smoking is dangerous (PR=1.08, 95% CI 1.05 to 1.11). They were also less likely to report that their friends (PR=0.61, 95% CI 0.54 to 0.70) and family (PR=0.51, 95% CI 0.44 to 0.60) accept smoking. Additionally, smoking initiation significantly decreased (PR=0.96, 95% CI 0.93 to 0.98) and a non-statistically significant drop in current tobacco use was observed (PR=0.93, 95% CI 0.78 to 1.11). Smokers' attachment to their tobacco brand also decreased (PR=0.47, 95% CI 0.30 to 0.73).

Conclusion Our findings suggest that PP and increased graphic warnings could contribute to changes in smoking norms and rates among adolescents.

INTRODUCTION

To be effective, tobacco control measures should be systematic, comprehensive and include mass media campaigns, taxation policy, access to smoking cessation advice and regulation of promotion of tobacco control.[1] One effective policy may be plain packaging (PP) of tobacco products, first implemented in Australia, where it contributed to a significant decrease in the attractiveness of tobacco products and tobacco brands, particularly among youths.[2] This evidence has led to the implementation of PP in other countries including France.

In the last two decades, smoking rates in France have remained high, despite multiple regulations and antismoking policies (eg, ban on smoking in public places, increase in tobacco price, ban on sales to minors), with a prevalence of daily smoking among adults stagnating at approximately 30%.[3 4] Compared with similar high-income countries such as Great Britain, where smoking rates decreased from 27% in 2000 to 16% in 2016,[5] or Germany where smoking rates during this period dropped from 36% to 25%,[3 6] the French tobacco control approach had yielded insufficient results. One of the reasons why smoking levels are not decreasing is because of persistently elevated levels of tobacco initiation among the youth. While only 18% of British children younger than 16 years had tried smoking in 2016,[7] in France the estimates in the same age group in 2014 were 49%.[8] This might in part be due to positive perceptions of smoking among French adolescents.

In order to change the norms regarding smoking, French authorities recently intensified tobacco control policies, raising taxation of tobacco products in November 2016 (by approximately 5%), increasing the frequency of antismoking media campaigns and adapting the British Stoptober programme which encourages smoking cessation.[9] Further, as other European Union countries, France translated the 2014's European tobacco products directive into national law,[10] increasing the size of graphic health warnings on tobacco packs. Concurrently, on 1 January 2017, the government introduced PP of manufactured cigarettes and roll-your-own tobacco packs, implying that all tobacco products sold in France are presented in standardised dark grey packs with uniform font in order to 'break the tobacco industry's marketing codes, especially among young individuals'. This intensification in tobacco control policies has coincided with the first decrease in decades in smoking rates among adults in France.[11]

PP has been linked with a reduction in positive perceptions of the image of cigarette brands, especially among adolescents and women.[12 13] This policy has also lead to reductions in smoking prevalence.[14] In Australia, the implementation of PP and larger graphic health warnings was associated with reductions in the appeal of tobacco products, and a slight but significant decline in smoking prevalence (0.55%) 3 years postimplementation.[15] However, the effect of PP could be different in other settings, including France. First, the prevalence of adult and adolescent smoking in Australia at the time of PP implementation was lower than in France (19%

among adults and 13% among adolescents aged 16–17 years in Australia vs 29% among adults and 32% for adolescents aged 17 years in France).[4 16–18] Also, both countries apply different taxation and tobacco control strategies and smoking-related stigma may differ between Australia and France.[19 20]

We sought to document and study the evolution of adolescent smoking-related perceptions and behaviour after the intensification of tobacco control policies. Therefore, we compare tobacco-related perceptions, adolescent smokers' attachment to tobacco brands, and smoking initiation as well as daily smoking rates among adolescents before and after the implementation of PP in France, using data from DePICT (*Description des Perceptions, Images, et Comportements liés au Tabagisme)*, a two-wave repeated cross-sectional nationwide phone survey conducted in 2016 and 2017.

METHODS

DEPICT: study design and recruitment

DePICT recruited French-speaking children aged 12–17 years, residing in metropolitan areas of France. Participants were recruited by trained interviewers from randomly generated telephone lists. Landline and mobile phone numbers were called up to 30 times by trained professionals using a computer-assisted telephone interviewing system. The oral consent of at least one parent was required.

DePICT recruited both adolescents (12–17 years) and adults (18–64 years, data not shown), using somewhat different methodologies in order to over-represent adolescents in the final sample, because changes in tobacco-related perceptions and behaviours in that age group were of paramount interest. We describe the way in which we recruited both populations (adolescents and adults), even though the present study focuses exclusively on adolescents, because a large fraction of them were recruited via one of their parents.

Adults and adolescents recruitment

Adults were randomly recruited (up to 30 recalls) among all members of eligible households reached via a landline or mobile phone, using the Kish method. The participation rate among adults was 63% for the first wave and 50% for the second wave. To recruit adolescents using the Kish method was not feasible, because this subgroup represents a small proportion of the population (7.4%). Moreover, oral consent from at least one parent was necessary. Therefore we constituted a convenience sample, recruiting adolescents: (1) In each household where an adult was reached or participated. (2) Through randomly generated phone number files created exclusively to recruit adolescents. Only one adolescent was recruited in each household; in households where more than one adolescent was eligible, we interviewed the youngest one whenever possible and after obtaining parental permission, because we anticipated that parents would rather we surveyed the oldest. Adolescents' participation rates were 58% in 2016 and 56% in 2017. After weighting the sample on age, sex, educational setting, parental socioeconomic status and family situation, DePICT adolescents were comparable to the adolescents in the general population of France.

Data collection procedures were independently monitored to ensure data quality, and the same methodology was used in both study waves. No weighting procedure taking into account the sampling procedure was used. The first wave of the DePICT study took place between 15 August and 15 November 2016, (prior to PP implementation), and the second wave between 15 August and 20 November 2017, (post PP implementation).

Smoking-related perceptions

Participants rated: (1) Their fear of the health consequences of smoking. (2) The dangerousness of smoking. (3) Their friends' and family's acceptance of smoking. (4) If smokers are less socially accepted than non-smokers on a Likert Scale (strongly agree, somewhat agree, neither agree nor disagree, tend to disagree, totally disagree). Responses were then coded dichotomously (agree vs disagree). The exact phrasing of these questions, which are also routinely used in the French National Health Survey,[19] and the way in which they were recoded are presented as online supplementary materials.

Smoking experimentation and current smoking

Participants were asked about their lifetime and current (daily and occasional) use of tobacco, smoking experimentation (having tried smoking at least once, even a single puff) and current daily smoking (≥1 cigarette/day, yes/no). Respondents indicating they had ever smoked but were not current smokers were classified as experimenters (ever smokers who are not current smokers) (yes/no). We distinguished two definitions of 'smoking experimenters': (1) **All experimenters**, comprised of current, and former smokers as well as experimenters (those who tried smoking at least once but never smoked neither regularly nor occasionally). (2) '**current experimenters**' combining current smokers and experimenters (vs former-smokers and non-experimenters).

Occasional or daily smokers were classified as current smokers (yes/no).

Perceptions of tobacco brands

Current smokers (daily and occasional) who reported smoking at least one tobacco brand regularly, were asked about their attachment to their main brand ('I am very attached to this brand'), their opinion of its name ('I like its name') and the perceived harmfulness of this brand ('My brand is less bad than other brands'). All answers were rated on a Likert Scale (strongly agree, somewhat agree, neither agree nor disagree, tend to disagree, totally disagree) and dichotomised into yes/no depending on the distribution ('Yes' corresponded to the answer 'Strongly agree' for attachment to the brand; 'Strongly agree' and 'Somewhat agree' for opinion regarding the brand's name and its perceived harmfulness). The coding and distribution of these variables are shown in online supplementary materials.

Sociodemographic characteristics and other covariates

We also assessed participants' age, sex and educational setting (general vs technical/vocational training). Parental characteristics previously shown to be linked to adolescents smoking[20–22] were also measured: family situation (parents living together: yes/no), occupational grade (at least one parent with a high occupational grade: yes (manager, executive,…)/no (middle-level manager, technician, clerk, manual worker,…), and parental smoking (at least one parent smokes regularly: yes/no). Since participants were interviewed by telephone, we also asked them whether one of their parents was present next to them during the interview.

Statistical analysis

Data were weighted to match the structure of the French population aged 12–17 years with respect to sex, age, educational setting, the parents' socioeconomic status (at least one parent working as a manager or equivalent) and family characteristics (parents living together or not). Weighting was based on data published by the National Institute of Statistics and Economic

Table 1 Characteristics of the *Description des Perceptions, Images, et Comportements liés au Tabagisme* (DePICT) Study sample (weighted, %). France, 2016–2017

	2016 n=2046	2017 n=1999
Age		
12–13 years	33.5%	33.5%
14–15 years	33.0%	33.0%
16–17 years	33.5%	33.5%
Sex		
Girls	50.7%	50.7%
Boys	49.3%	49.3%
Schooling characteristics		
General	76.2%	75.0%
Professional/vocation	23.8%	25.0%
Parents living together		
No	30.0%	30.0%
Yes	70.0%	70.0%
Parental high occupational grade		
No	73.1%	73.1%
Yes	26.9%	26.9%
Parental smoking		
No	67.9%	78.9%
Yes	32.1%	21.1%
Parental presence during the survey		
No	33.1%	31.3%
Yes	66.9%	68.7%
Smoking status		
Regular smoker	8.5%	8.1%
Occasional smoker	3.1%	2.4%
Former smoker	1.0%	0.7%
Non-smoker who never tried smoking	73.7%	79.2%
Non-smoker who tried smoking	13.7%	9.6%

Table 2 Smoking perceptions and experimentation among adolescents, before and 1 year after the introduction of plain packaging. *Description des Perceptions, Images, et Comportements liés au Tabagisme* (DePICT) Study, France, 2016–2017, n=3930, prevalence ratios

Outcome	Prevalence ratio 2017 versus 2016 *	P values
Fear of the health consequences of smoking (totally agree vs somewhat agree, neither agree nor disagree, rather disagree, I don't agree at all)	1.06 (1.02 to 1.09)	0.003
Smoking is dangerous (totally agree vs somewhat agree, neither agree nor disagree, rather disagree, I don't agree at all)	1.08 (1.05 to 1.11)	<0.001
Friends accept smoking (completely acceptable, rather acceptable vs no opinion, rather not acceptable, not at all acceptable)	0.61 (0.54 to 0.70)	<0.001
Family members accept smoking (completely, rather yes vs no opinion, rather not, not at all)	0.51 (0.44 to 0.60)	<0.001
Smokers are socially less accepted than non-smokers (completely, rather yes vs no opinion, rather not, not at all)	1.06 (0.95 to 1.18)	0.33
All smoking experimentation (smokers, former smokers and experimenters vs never-experimenters)	0.96 (0.93 to 0.98)	0.002
Current smoking experimentation (current smokers, experimenters vs former smokers, never experimenters)	0.96 (0.93 to 0.99)	0.002
Current smoking (yes vs no)	0.93 (0.78 to 1.11)	0.42

*Adjusted for age, sex, schooling characteristics, parents living together, parental high occupational grade, parental smoking and parental presence during the survey. All analyses except 'smoking experimentation' and 'current tobacco use' were also adjusted for participants' smoking status.

Studies[23 24] and on the same structure of the population (2016). Log-binomial regression models were used to estimate prevalence ratios (PRs) between the two study waves, adjusting for the listed covariates. All statistical analyses were conducted using SAS V.9.4 (SAS Institute); statistical significance was set at p=0.05.

Testing for interactions

We tested for statistical interactions between study waves, and (1) Sex. (2) Smoking status. (3) Age group. (4) Educational setting and we stratified analyses when a significant interaction term was found.

RESULTS

Main characteristics of our weighted sample are presented in table 1.

Across the two study waves, 28.8% of adolescents reported that they were not afraid of the consequences of smoking, and 81.3% said that smoking is dangerous; 16.5% reported that their family members had a positive attitude towards tobacco and 20.9% that their friends were favourable to smoking.

Results of multivariate log-binomial regression analyses examining changes in smoking-related perceptions and smoking experimentation are presented in table 2. Overall, participants' attitudes and beliefs concerning smoking were more negative in 2017 than in 2016: adolescents were more likely to report that smoking is dangerous (PR=1.08, 95% CI 1.05 to 1.11) and to be afraid of the consequences of smoking (PR=1.06, 95% CI 1.02 to 1.09). They were also less likely to report that their family (PR=0.51, 95% CI 0.44 to 0.60) and friends (PR=0.61, 95% CI 0.54 to 0.70) have positive opinions of smoking. However, there was no change in participants' perception of smokers' social acceptance (PR=1.06, 95% CI 0.95 to 1.18).

All smoking experimentation (including current smokers and former smokers) decreased from 26.3% in 2016 to 20.8% in 2017, the prevalence of non-smokers who had tried smoking also decreased from 13.7% to 9.6% (table 1). Multivariate log-binomial regression analyses showed that all experimentation rates among adolescents decreased by 4% in 2017 compared with 2016 (PR=0.96, 95% CI 0.93 to 0.98) after controlling for confounding variables (table 2). This estimate did not change when we modified the definition of smoking experimentation. Daily and occasional smoking rates dropped from 11.6% in 2016 to 10.5% in 2017, however this decrease was not statistically significant in multivariate analyses (PR=0.93, 95% CI 0.78 to 1.11).

After adjusting for covariates (table 3), current smokers were less likely to be attached to their tobacco brand in 2017 compared with 2016 (PR=0.47, 95% CI 0.30 to 0.73). They were also less likely to report liking the name of that brand (PR=0.73, 95% CI 0.62 to 0.86) and less likely to think that their brand is less harmful than other brands (PR=0.47, 95% CI 0.32 to 0.70).

We found statistically significant interactions between study wave and sex, age, socioeconomic status, schooling type and smoking with regard to smoking-related perceptions and/or experimentation.

Table 3 Perceptions of tobacco brands among adolescent smokers before and 1 year after the implementation of plain tobacco packaging. *Description des Perceptions, Images, et Comportements liés au Tabagisme* (DePICT) Study, France, 2016–2017, n=403, adjusted prevalence ratios

Outcome	Prevalence ratio 2017 vs 2016*	P values*
Attachment to a tobacco brand (high vs intermediate/low)	0.47 (0.30 to 0.73)	0.0009
Positive opinion of tobacco brand's name (high vs intermediate/low)	0.73 (0.62 to 0.86)	0.0002
Perception of low tobacco brand's harmfulness compared with others (yes vs no)	0.47 (0.32 to 0.70)	0.0002

*Adjusted for age, sex, schooling characteristics and parental smoking.

In stratified analyses (online supplementary data), changes in tobacco-related perceptions and experimentation seemed stronger in girls than in boys: smoking experimentation: PR=0.90, 95% CI 0.86 to 0.94 vs PR=0.99, 95% CI 0.97 to 1.02; perception that smoking is less socially acceptable: PR=1.20, 95% CI 1.03 to 1.40 vs PR=0.92, 95% CI 0.79 to 1.08. Smoking experimentation decreased more among older adolescents compared with younger ones. Smoking experimentation decreased among adolescents in professional or vocational settings in 2017 compared with 2016 (PR=0.80, 95% CI 0.73 to 0.88), but not among those in general education settings (PR=0.98, 95% CI 0.95 to 1.00). Finally, changes in the perceived harmfulness and friends' acceptance of smoking changed more among non-smokers than among smokers (online supplementary data).

DISCUSSION

Our study shows changes in adolescents' perceptions of tobacco and smoking experimentation after the introduction of PP of tobacco products and larger graphic health warnings. These changes in packaging were accompanied by an increase in the perceived harmfulness of smoking, a decrease in the acceptance of smoking and a decrease in smoking experimentation among adolescents. Also, 1 year after the introduction of PP in France, young smokers' attachment to their tobacco brand had decreased significantly. These results are in line with prior findings from Australia,[25] the first country to introduce PP, and suggest that changes in the packaging of tobacco products could contribute to decreases in tobacco acceptability and use in youths.

Interpretation

Our findings need to be interpreted in a context where the introduction of PP and larger graphic health warnings occurred in parallel to other tobacco control policies (eg, the adaptation of the Stoptober campaign, announced price increases). Moreover, recent data suggest a declining trend in the prevalence of smoking between 2014 and 2016 among adolescents living in France, which changes in packaging may have strengthened.[26]

In such a complex setting, it is difficult to identify the exact role of each type of tobacco control policy on smoking-related perceptions and tobacco experimentation among adolescents, especially that different policies can interact and influence potentially mediating factors such as parental smoking, or images and identities related to smoking.[27 28] Nevertheless, PP probably plays a role in the decrease in young smokers' attachment to their tobacco brand, since unattractive packaging has been repeatedly linked with less positive pack and product perceptions and a decrease in smoking pleasure.[29 30] Adolescents appear especially likely to be influenced by tobacco branding and marketing, and it is quite plausible that their perceptions are affected by changes in packaging.[31]

We observed a considerable drop in adolescents' perception of the social acceptability of smoking; this may be due to increase in antitobacco mass media campaigns as well as the introduction of other tobacco control policies which presented smoking more negatively and may have contributed to the subject of smoking being discussed between family members and friends.

The increase in adolescents' perceptions of the harmfulness of smoking is another mechanism by which public health interventions can influence smoking initiation and uptake.[32] In our study, perceptions of the harmfulness and social acceptance of smoking changed more among girls than among boys. In parallel, decreases in smoking experimentation were also more pronounced in girls than in boys. Girls might be more sensitive to social norms surrounding smoking,[33] and more motivated to try tobacco because of the 'glamourous' images of smoking covertly promoted by the tobacco industry.[34 35] PP and larger graphical health warnings aim to interrupt these associations. In France, adolescent girls are as likely to smoke as boys of the same age.[26] Since women seem to be especially vulnerable to the negative effects of smoking,[36 37] our finding that the implementation of PP is associated with a decrease in smoking initiation among girls is important. Nevertheless, as we did not find comparable decreases in smoking experimentation in boys, it may be necessary to identify other health promotion and tobacco control policies that are effective in both boys and girls.[38]

Limitations

Several limitations of our study need to be noted. First, since PP was introduced at the same time as larger graphic health warnings and other antitobacco measures, we cannot assert that the changes we observed are exclusively related to this policy. These changes probably result from a combination of different interventions. In order to be effective, tobacco control policies should be comprehensive and complementary, yet this makes the identification of the specific effects of each policy component difficult. Moreover, our prepost study design cannot establish a causal effect. Nonetheless, changes in adolescents' attachment to tobacco brands, which we observed, are likely to be specifically related to the appearance of tobacco products, indicating that PP is effective. Second, we examined changes in smoking-related perceptions and behaviours over the course of 1 year, which is a relatively short period. In Australia, the big dip in smoking levels in adolescents and adults was observed 3 years after the introduction of PP,[15] and we expect that in France the pattern will be similar. PP will likely contribute to long-term changes in the norms surrounding tobacco use, and changes in perceptions of smoking as well as smoking-related behaviours need to be monitored over the mid term to the long term. A third possible limitation is the possibility of selective non-response to our survey. It is possible that non-smokers were more likely to answer our survey than smokers; however this bias should have been the same in the two study waves. To mitigate this potential selection bias, we statistically weighted the data to render our sample representative of adolescents living in France. The weighted prevalence of smoking we observed in 2016 is comparable to other nationally representative sources of data in France, which is reassuring.[26]

Implications

Our study provides early and positive results regarding changes in smoking-related perceptions and behaviours

among adolescents after the implementation of PP of tobacco products in France. While further studies with more robust designs are needed to gain a more thorough understanding of the effects of PP on smoking initiation and daily use rates over time, these encouraging results add to already existing data suggesting the importance of PP as a component of tobacco control policies.

What this paper adds

What is already known on this subject

- Plain packaging (PP) was first introduced in Australia and contributed to decrease the attractiveness of smoking and lower smoking rates.
- France introduced PP in 2017, to counter one of the last existing forms of tobacco advertising and promotion, and decrease the attractiveness of smoking especially among adolescents.

What important gaps in knowledge exist on this topic

- Smoking rates and social acceptance at the time of PP implementation are higher in France than in Australia and the effect of PP could also be different.

What this paper adds

- One year after the implementation of PP in France, we report an increase in the perception of the harmfulness of smoking, a decrease in the social acceptance of smoking among adolescents, a decrease in smoking experimentation and in smokers' attachment to their tobacco brand.
- Our results suggest that PP contributes to changes in smoking norms and might contribute to reductions in overall smoking rates.

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Contributors All authors have materially participated in the research and/or the manuscript preparation. MM is the PI of the DePICT study. FE-K, CB and MM were implicated in designing and implementing the study. VMW assisted in planning the analysis. FE-K analysed the data and wrote the first draft of the manuscript, and all authors contributed to and have approved the final manuscript.

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REFERENCES

1 Shibuya K, Ciecierski C, Guindon E, *et al*. WHO framework convention on tobacco control: development of an evidence based global public health treaty. *BMJ* 2003;327:154–7.
2 Mise en place du paquet neutre. Gouvernement.fr. http://www.gouvernement.fr/argumentaire/mise-en-place-du-paquet-neutre-3861 (accessed 12 Apr 2018).
3 WHO. WHO European Country Profiles on Tobacco Control. 2003 http://www.euro.who.int/__data/assets/pdf_file/0006/68118/E80607.pdf?ua=1
4 Pasquereau A, Gautier A, Andler R, *et al*. Tabac et e-cigarette en France: niveaux d'usage d'après les premiers résultats. BEH. 2017 http://www.camip.info/nous-avons-lu-pour-vous/sante-au-travail-et-sante-publique/Addictions/article/tabac-et-e-cigarette-en-france (accessed 7 Nov 2017).
5 ONS. Adult Smoking Habits in Great Britain. 2016 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/drugusealcoholandsmoking/datasets/adultsmokinghabitsingreatbritain
6 WHO. WHO report on the global tobacco epidemic. 2017 http://www.who.int/tobacco/surveillance/policy/country_profile/deu.pdf.
7 cancerresearchuk.org. Childhood smoking statistics. http://www.cancerresearchuk.org/health-professional/cancer-statistics/risk/childhood-smoking
8 Spilka S, Ehlinger V, Nézet OL, *et al*. Alcool, tabac et cannabis en 2014, durant les « années collège. 2015 http://www.ofdt.fr/publications/collections/periodiques/lettre-tendances/alcool-tabac-et-cannabis-en-2014-durant-les-annees-college-tendances-106-decembre-2015/ (accessed 8 Nov 2016).
9 Accueil Moi(s) sans tabac. http://mois-sans-tabac.tabac-info-service.fr/ (accessed 2 May 2018).
10 Directive. 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC Text with EEA relevance. 2014 http://data.europa.eu/eli/dir/2014/40/oj/eng
11 Pasquereau A, Andler R, Guignard R, *et al*. La consommation de tabac en France : premiers résultats du baromètre santé 2017. *BEH* 2018.
12 Germain D, Wakefield MA, Durkin SJ. Adolescents' perceptions of cigarette brand image: does plain packaging make a difference? *J Adolesc Health* 2010;46:385–92.
13 Hammond D, Doxey J, Daniel S, *et al*. Impact of female-oriented cigarette packaging in the United States. *Nicotine Tob Res* 2011;13:579–88.
14 McNeill A, Gravely S, Hitchman SC, *et al*. Tobacco packaging design for reducing tobacco use. *Cochrane Database Syst Rev* 2017;4:CD011244.
15 Chipty T. Study of the Impact of the Tobacco Plain Packaging Measure on Smoking Prevalence in Australia. 2016 https://www.health.gov.au/internet/main/publishing.nsf/content/491CE0444F7B0A76CA257FBE00195BF3/$File/PIR%20of%20Tobacco%20Plain%20Packaging%20-%20with%20Addendum.docx
16 Diethelm P, Farley T. Refuting tobacco-industry funded research: empirical data shows decline in smoking prevalence following introduction of plain packaging in Australia. *Tob Prev Cessat* 2015;1.
17 Spilka S, Nézet OL, Ngantcha M, *et al*. Les drogues à 17 ans : analyse de l'enquête ESCAPAD 2014. 2015 http://www.ofdt.fr/publications/collections/periodiques/lettre-tendances/les-drogues-17-ans-analyse-de-lenquete-escapad-2014-tendances-100-mai-2015/ (accessed 8 Nov 2016).
18 Scollo M, Winstanley M. Tobacco in Australia, a comprehensive online resource. 2015 http://www.tobaccoinaustralia.org.au/chapter-1-prevalence/1-6-prevalence-of-smoking-teenagers
19 Peretti-Watel P, Legleye S, Guignard R, *et al*. Cigarette smoking as a stigma: evidence from France. *Int J Drug Policy* 2014;25:282–90.
20 de Looze M, ter Bogt T, Hublet A, *et al*. Trends in educational differences in adolescent daily smoking across Europe, 2002-10. *Eur J Public Health* 2013;23:846–52.
21 Leonardi-Bee J, Jere ML, Britton J. Exposure to parental and sibling smoking and the risk of smoking uptake in childhood and adolescence: a systematic review and meta-analysis. *Thorax* 2011;66:847–55.
22 Kandel DB, Griesler PC, Hu MC. Intergenerational Patterns of Smoking and Nicotine Dependence Among US Adolescents. *Am J Public Health* 2015;105:e63–72.
23 de P. à 2016 | Insee. 1968 https://www.insee.fr/fr/statistiques/2012713 (accessed 3 May 2018).
24 Repères et références statistiques. ESR: enseignementsup-recherche.gouv.fr. 2016 http://www.enseignementsup-recherche.gouv.fr/cid106595/reperes-et-references-statistiques-edition-aout-2016.html (accessed 6 Dec 2017).
25 Australian Government, Department of Health. Post-implementation review tobacco plain packaging. 2016 https://ris.govspace.gov.au/files/2016/02/Tobacco-Plain-Packaging-PIR.pdf (accessed 25 Mar 2016).
26 Spilka S, Le Nézet O, Janssen E, *et al*. Les drogues à 17 ans : analyse de l'enquête ESCAPAD 2017. 2018 https://www.ofdt.fr/BDD/publications/docs/eftxssy2.pdf (accessed 25 Apr 2018).
27 Trapl ES, Yoder LD, Frank JL, *et al*. Individual, parental, and environmental correlates of cigar, cigarillo, and little cigar use among middle school adolescents. *Nicotine Tob Res* 2016;18:834–41.

28 Wehbe MS, Basil M, Basil D. Reactance and coping responses to tobacco counter-advertisements. *J Health Commun* 2017;22:576–83.
29 Gallopel-Morvan K, Moodie C, Eker F, *et al*. Perceptions of plain packaging among young adult roll-your-own smokers in France: a naturalistic approach. *Tob Control* 2015;24:e39–44.
30 Moodie C, Mackintosh AM, Hastings G, *et al*. Young adult smokers' perceptions of plain packaging: a pilot naturalistic study. *Tob Control* 2011;20:367–73.
31 Saito J, Yasuoka J, Poudel KC, *et al*. Receptivity to tobacco marketing and susceptibility to smoking among non-smoking male students in an urban setting in Lao PDR. *Tob Control* 2013;22:389–94.
32 Song AV, Morrell HE, Cornell JL, *et al*. Perceptions of smoking-related risks and benefits as predictors of adolescent smoking initiation. *Am J Public Health* 2009;99:487–92.
33 Ashley OS, Penne MA, Loomis KM, *et al*. Moderation of the association between parent and adolescent cigarette smoking by selected sociodemographic variables. *Addict Behav* 2008;33:1227–30.
34 Castaldelli-Maia JM, Ventriglio A, Bhugra D. Tobacco smoking: From 'glamour' to 'stigma'. A comprehensive review. *Psychiatry Clin Neurosci* 2016;70:24–33.
35 Gilbert E. Constructing 'fashionable' youth identities: australian young women cigarette smokers. *J Youth Stud* 2007;10:1–15.
36 Kiyohara C, Ohno Y. Sex differences in lung cancer susceptibility: a review. *Gend Med* 2010;7:381–401.
37 Sørheim IC, Johannessen A, Gulsvik A, *et al*. Gender differences in COPD: are women more susceptible to smoking effects than men? *Thorax* 2010;65:480–5.
38 Dobbins M, DeCorby K, Manske S, *et al*. Effective practices for school-based tobacco use prevention. *Prev Med* 2008;46:289–97.