How Adolescents Get Their Cigarettes: Implications for Policies on Access and Price

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Keeping adolescents from smoking is a focal issue in tobacco control. To this end, adolescent access laws, which make it illegal to sell cigarettes to minors, and increases in cigarette excise taxes represent seemingly simple, effective, and politically popular policy tools (1,2). Whether either of these measures prevents adolescent smoking, however, depends on their ability to influence adolescents in the early phases of smoking uptake and whether these adolescents actually purchase the cigarettes they smoke. This study presents, to our knowledge, the first examination of cigarette sources, analyzed by adolescents’ smoking experience.

We analyzed data from the 1996 California Tobacco Survey, which used random-digit-dialing methodology and telephone interviews. An adult in each household enumerated all household members, and interviewers obtained verbal parental permission to interview 12- to 17-year-old individuals. Adults may have been present. At the end of the interview, interviewers recorded whether they thought someone was listening to the interview. The response rate was 71.2% (6252 individuals responding of 8778 individuals contacted). Details of the survey methodologies are presented elsewhere (3,4). Analyses were performed by use of the WesVarPC® statistical package (5), which takes into account the sample design in computing 95% confidence intervals and tests of statistical significance (6).

Adolescents who reported that they had smoked one cigarette or more in their lifetime were classified as ‘‘ever smokers,’’ and adolescents who had smoked within the past 30 days were classified as ‘‘current smokers.’’ Adolescents were also asked how many days of the past 30 they smoked and how many cigarettes they smoked on average on the days that they smoked.

Additionally, adolescents were grouped according to their status on the smoking uptake continuum, which considers their previous smoking experience and likelihood of future smoking (4). Adolescents who had smoked at least one cigarette but less than 100 cigarettes at least 30 days before the interview and had a strong commitment to ‘‘never smoke’’ were classified as ‘‘early experimenters.’’ Adolescents who had experimented 30 days or more before the survey and had a weak commitment to never smoke and adolescents who had experimented within the past 30 days but had smoked fewer than 100 cigarettes in their lifetime were designated as advanced experimenters. Finally, adolescents who had smoked 100 cigarettes or more in their lifetime were classified as established smokers.

Only 4.7% ± 2.6% (mean ± 95% confidence interval) of early experimenters and 8.6% ± 2.3% of advanced experimenters reported that they usually buy their own cigarettes, whereas 38.9% ± 5.5% of established smokers reported that they usually buy their own. Additionally, 7.6% ± 3.2% early experimenters and 13.5% ± 2.7% of advanced experimenters said they usually have others buy cigarettes for them, and 42.7% ± 4.7% of established smokers reported that others buy their cigarettes. In contrast, 76.1% ± 5.6% of early experimenters and 73.4% ± 4.0% of advanced experimenters were usually given cigarettes, whereas only 17.2% ± 4.6% of established smokers were usually given cigarettes (Fig. 1).

Analyzing the source of cigarettes by average daily consumption reveals an apparent threshold level of smoking, over which most adolescents purchase cigarettes. Among current smokers, the majority (65.2% ± 5.3%) of those who consumed on average fewer than one cigarette per day usually were given cigarettes (Table 1). For those who smoked one cigarette or more per day, the majority usually bought cigarettes themselves or through intermediaries. Only 3.2% ± 2.5% of those who smoked five cigarettes or more per day were usually given cigarettes.

We calculated an adolescent cigarette generosity ratio as the proportion of cigarettes purchased by an adolescent that are given away to other adolescents. Importantly, we assumed that adolescents who reported that they usually were given cigarettes received them from other adolescents who had bought them, either directly or through an intermediary:

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\text{Generosity} = \frac{\text{cigarettes given away}}{\text{total consumption}} = \frac{\text{total consumption} - \text{consumption of buyers}}{\text{total consumption}}
\]

If all cigarettes consumed by adolescents were bought by adolescents, then adolescents who bought the cigarettes themselves or through an intermediary purchased at most 7.24 ± 1.30 packs per...
month on average and gave away 0.52 ± 1.30 packs per month—the average consumption reported by adolescent nonbuyers. The cigarette generosity ratio is 0.072. Thus, on average, for every 14 cigarettes smoked by adolescents who usually bought cigarettes, they gave one cigarette away. This ratio may overestimate generosity among adolescents if a substantial proportion of adolescent nonbuyers received their cigarettes from friends or without permission. CI = confidence interval.

Our results, which show that approximately 55% of adolescent current smokers usually purchased their cigarettes themselves or through cooperative intermediaries, are consistent with earlier findings (7,8). However, only 34.4% ± 2.9% of adolescent ever smokers can be classified as current smokers. Nearly half of adolescent current smokers have smoked 100 cigarettes or more and can be classified as established smokers. For them, prevention is moot. For the vast majority of adolescent experimenters, who rely on friends with more smoking experience to supply their cigarettes, access laws likely have little impact.

Similarly, the linkage between increased excise taxes and reduced adolescent smoking appears tenuous, since adolescents who are beginning to smoke typically do not buy their own cigarettes. At the current average price of $2.50 per pack of premium cigarettes in California, a single cigarette would cost about $0.13 (9), a price that is too low to deter sharing among friends. Given our estimate that adolescent cigarette buyers give away at most 0.52 packs per month, adolescents who purchase cigarettes spend no more than an extra $1.25 per month on average to supply cigarettes to their friends. Most likely, adolescents give away their cigarettes sporadically, so that the transfer seems even more inconsequential. Even if excise taxes were raised an additional $1.10 per pack—as proposed in the early tobacco industry settlement discussions—a single cigarette would cost less than $0.20, which is less than change for a phone call. For price to serve as an effective deterrent to adolescent smoking, cigarettes must become so expensive that giving one to a friend would represent a significant expenditure—certainly more than $0.20 per cigarette. Substantially higher taxation levels, however, potentially encourage black markets for cigarettes (10).

Although current policy discussions regarding adolescent smoking prevention focus almost exclusively on access laws and excise taxes, our research provides justification to shift the public debate toward developing alternative strategies. For example, in light of research that links adolescent smoking to tobacco industry promotional activities (11), limits on cigarette advertising and promotions may be effective. Given that adolescent smoking is generally a rebellious behavior, showing adolescents how they are specifically targeted and manipulated by the tobacco industry may dissociate smoking from rebellion. Finally, since nearly all adolescent established smokers want to quit (11), greater emphasis on providing quitting assistance for adolescents may help reduce adolescent smoking prevalence.

Our research does not suggest that access laws and excise taxes are wholly ineffective. Although these measures may not prevent early experimentation, more research is necessary to determine whether they can delay or discourage adolescents from becoming established smokers. Such an effect would certainly be consistent with the public health agenda.

**References**

NOTES

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