

Nondaily Smokers: Who Are They?

Kristen M. Hassmiller, MHSA, Kenneth E. Warner, PhD, David Mendez, PhD, David T. Levy, PhD, and Eduardo Romano, PhD

Until recently, nicotine addiction experts believed that the population of cigarette smokers included few smokers who were able to limit their consumption to just a few cigarettes per day.¹ The notion that a substantial proportion of smokers do not smoke every day seemed even less plausible. However, over the past decade we have learned that as many as one-fifth of current smokers do not smoke on a daily basis.^{2–4}

Who are these “unorthodox” smokers, who seem to defy the laws of nicotine addiction as we thought we understood them? Given rising rates of smoking among youth through much of the 1990s and increasing restrictions on and social disapprobation of smoking by adults, one might suspect that these “some-day” (SD) smokers consist primarily, if not exclusively, of smokers in transition: young people beginning to smoke and older adults trying to quit. However, research suggests that many SD smokers may sustain this pattern for at least 1 to 2 years.^{3,4} Until now, we have not known how many of these smokers maintain this pattern for even longer periods of time.

SD smoking is important to understand for at least 3 reasons. First, given strong evidence of dose–response effects in smoking and its disease sequelae,⁵ SD smokers may well have a lower risk of tobacco-related illness than do daily (“every-day,” ED) smokers, although the same evidence indicates that they will still experience substantially greater risk than nonsmokers. Clearly, it is essential to understand the nondaily pattern to project the burden of smoking-produced disease in the future.

Second, the SD smoker phenomenon is of interest in understanding how the changing social environment affects smoking behavior. Restrictions on where cigarettes can be smoked have grown dramatically over the past decade, the result of formal policies pertaining to public places and workplaces as well as informal policies within households. Research finds that such restrictions reduce both smoking prevalence and the daily con-

Objective. We sought to understand who constitutes the sizable population of nondaily, or some-day (SD), smokers.

Methods. We analyzed descriptive statistics and regression results using the 1998–1999 Current Population Survey Tobacco Use Supplement to determine the prevalence of SD smokers, their sociodemographic characteristics, and the smoking patterns and histories of groups differentiated by the length and stability of their SD smoking.

Results. SD smokers make up 19.2% of all current smokers. Among SD smokers, 44.6% have smoked less than daily for at least 1 year, no more than 14.4% are just starting to smoke, and the rest are likely in transition. Overall, SD smokers smoked a mean of 102 cigarettes per month (compared to 566.4 for daily smokers), on an average of 14.5 days out of the past 30.

Conclusions. SD smokers make up a substantial segment of the smoking population. They are not just beginning to smoke nor trying to quit. Many have developed a longstanding pattern of nondaily smoking, smoking relatively few cigarettes on the days when they do smoke. They are not substantially younger than daily smokers, as one might expect. (*Am J Public Health.* 2003;93:1321–1327)

sumption of continuing smokers.^{6–9} This is consistent with research on drug use in different societies that demonstrates that social context invariably defines how drugs are consumed.¹⁰ A better understanding of SD smokers, both individually and as a group, would help us understand contemporary attitudes about smoking and, eventually, assist in the design of more effective tobacco control policies.

Finally, it is important to understand how the SD smoking phenomenon will affect SD smokers’ exposure to cigarettes in the future. Will SD patterns of smoking persist for many smokers? Will they increasingly result in eventual cessation for most? Will many SD smokers lapse into daily smoking? Unfortunately, neither previous research nor the present study can fully address these questions, as none have longitudinal data spanning more than 2 years. However, the current study is able to shed some light on the answer.

Knowledge of SD smoking derives primarily from state-specific surveys conducted in the early part of the past decade.^{2–4} The present analysis relies on a more recent (1998–1999) nationally representative sample to examine the phenomenon in its contemporary context. In addition, the detail available in this survey permits a distinction

between smokers who have sustained an SD smoking pattern for many years, those in the process of becoming smokers, and those fluctuating among daily smoking, SD smoking, and abstinence. This distinction facilitates better (albeit imperfect) insight on the magnitude and smoking behaviors of these very different groups of SD smokers.

The present study addresses 3 questions, updating and extending knowledge gleaned from earlier work: (1) Do SD smokers differ significantly from ED smokers in terms of sociodemographic characteristics and cigarette consumption on those days on which they do smoke? (2) What is the overall prevalence of SD smoking, and how is SD smoking distributed among initiating smokers, those apparently transitioning toward quitting, and smokers with stable smoking patterns? (3) Are there differences in smoking patterns and history among the SD smokers in the initiating, transitional, and stable-pattern groups?

METHODS

Data

The data come from the September 1998, January 1999, and May 1999 waves of the Current Population Survey, which included a Tobacco Use Supplement (TUS) sponsored by

the National Cancer Institute.¹¹ The Current Population Survey—which is the federal government's primary source of labor market data—is a monthly survey of approximately 50 000 households and more than 100 000 individuals. The survey employs a probability sample based on stratified clusters of households drawn from the civilian noninstitutionalized population of the United States. The TUS is a series of more than 50 questions exploring individuals' use of tobacco and opinions on tobacco policy. The US Census Bureau conducts these surveys. Data collection methodology is described elsewhere.¹¹

The TUS questions were asked of respondents aged 15 and older. Following the survey administrators' recommendation,¹¹ the data from these 3 waves were aggregated into a single data file. Households were selected such that no household was interviewed in more than 1 wave. The sample consisted of 38 086 current smokers who responded with regard to their own smoking behavior only (i.e., proxy respondents such as parents or spouses were excluded).

Measures

Definition of SD and ED current smokers.

Current smokers are respondents who have

smoked at least 100 cigarettes in their lifetime and who report currently smoking cigarettes on some days ("SD smokers") or every day ("ED smokers").

Subgroups of smokers. The definition of each group is presented in Table 1. We divided the populations of SD and ED smokers into 4 broad mutually exclusive categories: initiators, stable-pattern smokers, transitional smokers, and unclassified smokers. Stable-pattern smokers were further categorized as short-term and long-term smokers. Transitional SD smokers consisted of 3 subgroups based on the direction of their transition: daily to SD smoking (labeled "toward less intensive smoking"); not smoking to SD or ED smoking ("toward more intensive smoking"); and those who have transitioned from SD to ED and back to SD smoking within the year ("direction unclear"). All transitional ED smokers were transitioning from not smoking or SD smoking, and hence were labeled "toward more intensive smoking."

Evans et al.² found that the proportion of all current smokers who are SD smokers stabilizes around 3 years after initiation of fairly regular smoking; they recommend the use of 5 years as a conservative estimate.

Hence, we define initiators as current SD smokers who have smoked for less than 5 years, as did Gilpin et al.⁴ That is, initiators are smokers who might not have established stable smoking patterns due to the newness of their smoking. To classify initiators, the number of years spent smoking was calculated as the difference between the respondent's current age and the age at which he or she reported first starting to smoke cigarettes "fairly regularly."

The stability of smoking patterns for all other SD smokers was determined from 2 variables. First, respondents' smoking status 12 months prior was assessed by their response to the following question: "Around this time 12 months ago, were you smoking cigarettes every day, some days, or not at all?" The second variable was the length of time since an SD smoker smoked daily (number of days, weeks, months, or years), where a respondent reported to have "ever smoked cigarettes every day for at least 6 months." For those SD smokers who had never smoked daily, the "length of time since the smoker smoked daily" was set equal to the total number of years spent smoking. For an SD smoker who had ever smoked daily, the length of time since smoking daily was ascertained directly by asking "About how long has it been since you last smoked cigarettes every day?" (number of days, weeks, months, or years).

We considered stable SD smoking patterns to include all SD smokers who had smoked for more than 5 years or had smoked on "some days" 12 months prior, and whose length of time since daily smoking was at least 1 year. To isolate the most stable smoking patterns, a further distinction was made between SD smokers who had not smoked daily in at least 5 years ("long-term stable-pattern SD smokers") and those who had smoked daily at some point between 1 and 5 years prior ("short-term stable-pattern SD smokers").

Smoking behaviors. SD smokers' response to the following question was used as an indication of smoking frequency: "On how many of the past 30 days did you smoke cigarettes?" To measure smoking intensity, current ED smokers were asked "On the average, how many cigarettes do you now smoke

TABLE 1—Definitions of Subgroups of Current Smokers

Some-day (SD) smokers	
Initiator	Smoker who has smoked for less than 5 years.
Stable-pattern	Noninitiator who was a some-day smoker 12 months prior and who has not smoked daily for:
Long-term	At least 5 years.
Short-term	At least 1 but no more than 5 years.
Transitional	Noninitiator who was not a SD smoker 12 months prior.
Toward less intensive smoking	SD smoker 12 months prior.
Toward more intensive smoking	Did not smoke at all 12 months prior.
Direction unclear	Direction cannot be ascertained.
Unclassified	Noninitiator who cannot be otherwise classified.
Every-day Smokers	
Initiator	Smoker who has smoked for less than 5 years.
Stable-pattern	Noninitiator who was a daily smoker 12 months prior and who has smoked every day for:
Long-term	At least 5 years.
Short-term	At least 1 but no more than 5 years.
Transitional	Noninitiator who did not smoke daily 12 months prior.
Toward more intensive smoking	Smoked some days or not at all 12 months prior.
Unclassified	Noninitiator who cannot be otherwise classified.

a day?” Current SD smokers were asked “On the average, [on the days] when you smoked, about how many cigarettes did you smoke a day?” Respondents’ days smoked and cigarettes per day were multiplied to obtain the number of cigarettes smoked in a 30-day period, which can be construed as the “dose” of smoking per month. Smokers’ intent to quit within 6 months was determined by their response to the question “Are you seriously considering stopping within the next 6 months?”

Sociodemographic characteristics. Control variables for the regression analysis (described immediately below) included age,

gender, race, education, and annual household income.

Statistical Analysis

To investigate the differences between SD and ED smokers, we performed *t* tests and binary logistic regressions, and calculated descriptive statistics using Stata, Version 7.0 (Stata Corp, College Station, Tex). This program takes into account the clustered nature of the sample and the survey weighting in its variance estimation procedures. The regressions examined main effects of and interactions among age, gender, race, education, household income, and marital status on

smoking status. For the regressions, 2945 of the 38 086 cases were omitted due to missing sociodemographic information. To adjust for households that did not answer the TUS and for the elimination of all surveys answered by a proxy, all statistical analyses were weighted according to the recommendation of the survey administrators.¹¹

RESULTS

Differences Between SD and ED Smokers

Sociodemographic characteristics. Younger, minority (particularly Hispanic), better-educated, and higher-income smokers were more likely than older, White, less-educated, lower-income smokers to smoke on a nondaily basis (Table 2, column 3). Smokers aged 15 to 25 were more likely to be SD smokers than any of the older age groups. Furthermore, SD smokers on average were slightly younger than ED smokers. However, with mean ages of 38.1 and 40.9 years, respectively, both groups were dominated by smokers who were over the age of 30. Compared with current smokers with less than a completed high school education, smokers with some college or an associate’s degree were 1.42 times more likely to be an SD smoker, and those with a bachelor’s or advanced degree were 2.56 times more likely to be an SD smoker. Interaction terms were not found to be significant (results not shown).

Smoking behavior. Table 3 presents data on the smoking frequency and intensity for SD and ED smokers. The overall mean number of days smoked per month by SD smokers was 14.5. SD smokers consumed an average of 6.1 cigarettes per day on days when they smoked. Averaging across all SD smokers’ monthly consumption, SD smokers consumed an average of 102.0 cigarettes per month. On average, ED smokers smoked 3 times as many cigarettes per day (18.9) and nearly 6 times as many cigarettes per month (566.4). Note, however, that monthly dose for SD smokers ranged dramatically by the number of days per month they smoked: from 16.6 cigarettes per month for those smoking on 5 or fewer days to 273.8 for those smoking 25 to 30 days.

TABLE 2—Distributions of Sociodemographic Variables by Smoking Status and Odds Ratios of Being an SD vs ED Smoker, From Binary Logistic Regressions

	Distribution		Odds Ratios	
	SD Smokers, ^a % (n = 6724)	ED Smokers, % (n = 29 336)	All SD vs All ED (95% CI)	SD vs ED Stable-Pattern ^b (95% CI)
Age, years				
15–25 (reference)	23.7	17.4	...	...
26–35	24.3	20.8	0.81** (0.73, 0.90)	1.02 (0.83, 1.25)
36–45	23.9	26.4	0.64** (0.58, 0.72)	0.87 (0.70, 1.07)
46–55	14.7	19.1	0.52** (0.46, 0.59)	0.65** (0.52, 0.82)
>55	13.3	16.3	0.64** (0.56, 0.73)	0.74* (0.58, 0.94)
Sex				
Female (reference)	46.0	47.0	...	...
Male	54.0	53.0	0.96 (0.91, 1.03)	1.01 (0.91, 1.11)
Race				
White (reference)	66.7	80.0	...	...
Black	14.5	10.9	1.84** (1.66, 2.04)	2.56** (2.19, 3.00)
Hispanic	14.4	5.9	3.28** (2.93, 3.67)	5.55** (4.74, 6.48)
Asian/Pacific Islander	2.9	2.0	1.30* (1.05, 1.61)	1.56** (1.10, 2.21)
American Indian, Aleut, Eskimo	1.4	1.2	1.60** (1.24, 2.05)	2.25* (1.58, 3.21)
Education				
<High school graduate (reference)	20.5	22.8	...	...
High school graduate, GED, or equivalent	33.3	41.4	1.07 (0.98, 1.17)	1.15 (0.99, 1.34)
Some college or associate degree	27.9	25.6	1.42** (1.28, 1.56)	1.48** (1.26, 1.73)
Bachelor’s, master’s, or professional degree	18.3	10.2	2.56** (2.28, 2.86)	2.87** (2.40, 3.43)
Annual Household Income, \$				
<25 000 (reference)	37.7	39.8	...	...
25 000–49 999	30.5	34.2	1.01 (0.93, 1.09)	0.93 (0.81, 1.06)
>49 999	31.9	26.0	1.34** (1.23, 1.47)	1.35** (1.18, 1.56)

Note. SD = some-day; ED = every-day; CI = confidence interval; GED = general equivalency diploma.

^aNumbers may not sum to 100 owing to rounding.

^bAnalysis includes 2298 SD and 24 487 ED long-term stable-pattern smokers.

P* < .05; *P* < .01. Results are 2-tailed.

TABLE 3—Smoking Frequency and Intensity Among SD and ED Smokers

	Number of Days of the Past 30 on Which SD Smoker Smoked						All SD Smokers (n=6908)	ED Smokers (n=31178)
	1-5 (n=1353)	6-10 (n=1290)	11-15 (n=1679)	16-20 (n=1512)	21-25 (n=481)	26-30 (n=593)		
Mean number of days smoked of past 30	3.3	9.1	14.7	19.8	24.4	29.4	14.5	30
Percent of all smokers	3.6	3.4	4.4	4.0	1.3	1.6	19.2 ^a	80.8 ^a
Percent of SD smokers ^b	19.6	18.7	24.3	21.9	7.0	8.6	100.0	
Mean number cigarettes per smoking day	5.2	5.1	6.2	6.9	8.6	9.3	6.1	18.9
Mean dose of cigarettes per month	16.6	46.6	90.5	136.7	209.8	273.8	102.0	566.4

Note. With the indicated exceptions, figures exclude 919 smokers with missing cigarette consumption data. SD = some-day; ED = every-day.

^aIncludes smokers with missing cigarette consumption data.

^bNumbers do not sum to 100 owing to rounding.

Stable-pattern smokers. As discussed in the next section, a significant group of SD smokers demonstrated a well-established pattern of SD smoking. It is thus of special interest to compare this group to smokers with equally well-established patterns of daily smoking. The relationships between socio-demographic variables and smoking status were not qualitatively different from those reported above, although the age impact was slightly dampened, and the impact of race was increased. There was a particularly large odds ratio for Hispanics (Table 2, column 4).

Long-term stable-pattern SD smokers smoked on fewer than half as many days (13.3 of the last 30) as long-term stable-pattern ED smokers, and consumed a fraction of the number of cigarettes per day on days they smoked (5.3 cigarettes per day for SD smokers vs 20.0 per day for ED smokers; Table 4). This results in a monthly dose of cigarette exposure 8-fold greater for ED smokers (600 vs 76.2). Age of initiation (self-defined by respondents as initiation of “fairly regular smoking”) clearly distinguishes long-term SD from long-term ED smokers, with the latter having started 2 years earlier than the former. Finally, more long-term stable-pattern SD smokers (56.2%) intended to quit within the next 6 months than long-term stable-pattern ED smokers (40.0%). However, long-term stable-pattern SD and ED smokers expressed the lowest intent to quit

among all SD and ED smoking subgroups, which is consistent with the notion that the long-term stable-pattern smokers were those who had settled into a smoking pattern.

Distribution of Subgroups Among Smokers

Of all current smokers, 19.2% were SD smokers (Table 4). Of the SD smokers, only 14.4% were initiators, while fully one-third (34.4%) were long-term stable-pattern SD smokers (accounting for 6.6% of all current smokers). Nearly half (44.6%) of all SD smokers (and 8.6% of all current smokers) were SD smokers who exhibited a stable pattern of SD smoking lasting at least 1 year. One-third (31.8%) of SD smokers were transitional, and 9.3% could not be classified otherwise. Of all SD smokers, 15.6% were transitioning to smoking less, whereas 9.0% were transitioning to smoking more. Those whose direction was unclear represented 7.2% of SD smokers.

Heterogeneity of SD Smokers

As would be expected, initiators were substantially (nearly 20 years) younger than other subgroups of SD smokers (Table 4). Stable-pattern and transitional SD smokers were close in average age. Mean number of days smoked varied modestly across the subgroups, as did the mean number of cigarettes per smoking day. SD smokers transitioning toward less intensive smoking consumed the most cigarettes per month (184.6), and long-

term stable-pattern SD smokers consumed the least (76.2).

Consistent with the subgroup labels, SD smokers transitioning toward less intensive smoking had the highest intent to quit within 6 months (80.2%), whereas the long-term stable-pattern SD smokers had the lowest intent (56.2%). Initiators were closer to transitional smokers in this regard, while short-term stable-pattern smokers fell in between the 2 extremes.

Only one-quarter (24.8%) of long-term stable-pattern smokers reported ever having smoked daily, while the majority of transitional smokers reported having done so. Nearly one-third (31.8%) of initiators said that they had smoked daily in the past, which suggests that our definition of initiator may be overly conservative; a potentially sizable proportion of “initiators” might be more appropriately classified as transitional (see the Discussion section regarding problems in defining subgroups).

Both age-of-initiation variables indicated that long-term stable-pattern SD smokers started smoking later than all of the other subgroups.

DISCUSSION

When it was first reported,² the finding that nearly one-fifth of all current smokers do not smoke every day caught the public health community by surprise. The finding has now been confirmed in subsequent studies,^{3,4} including this one, the first to utilize a recent, large, nationally representative sample. Less clear, however, has been precisely who these SD smokers are. Relying on cross-sectional data, neither this study nor its predecessors can provide a definitive characterization of the smoking patterns that comprise the SD category.

Nevertheless, the data do permit some intriguing qualitative conclusions. Notably, a large proportion of these smokers had achieved a stable pattern of nondaily smoking. One might have expected that nearly all SD smokers would be beginning to smoke or attempting to quit. However, close to half of all SD smokers had established a reasonably stable pattern of smoking on a nondaily basis. Clearly, the “occasional smokers” population

TABLE 4—Subgroup Characteristics

	Percentage of Smokers	Percentage of SD Smokers	Percentage of ED Smokers	Mean Age	Mean No. Days Smoked of Past 30	Mean No. Cigarettes per Smoking Day	Mean No. Cigarettes Per Month ^a	Intend to Quit Within 6 Months? (% Yes)	Ever Smoked Daily? (% Yes)	Start Smoking Before Age 20? (% Yes) ^b	Mean Age of Initiation ^b
SD Smokers											
Overall	19.2	100.0	...	38.1	14.5	6.1	102.0	65.1	52.0	66.6	18.8
Initiator	2.8	14.4	...	21.4	15.5	5.4	90.6	70.8	31.8	70.5	19.1
Stable Pattern	8.6	44.6	...	...	...	...	...	...	...	...	...
Long-Term	6.6	34.4	...	40.8	13.3	5.3	76.2	56.2	24.8	62.2	19.2
Short-Term	2.0	10.2	...	42.5	14.7	6.7	99.2	67.6	100.0	66.6	18.6
Transitional	6.1	31.8	...	...	...	...	...	...	...	...	...
To Less Intensive Smoking	3.0	15.6	...	41.0	18.2	9.8	184.6	80.2	89.8	73.6	17.9
To More Intensive Smoking	1.7	9.0	...	40.5	11.7	6.3	83.8	74.2	59.4	66.5	18.6
Direction Unclear	1.4	7.2	...	42.5	17.1	7.9	141.4	69.8	100.0	65.9	18.6
Unclassified	1.7	9.2	...	...	...	...	...	...	...	...	...
ED Smokers											
Overall	80.8	...	100.0	40.9	30.0	18.9	566.4	41.6	...	78.1	17.4
Initiator	6.8	...	8.4	20.9	30.0	13.3	398.8	45.7	...	79.5	18.3
Stable-Pattern	67.4	...	83.4	...	...	...	...	...	...	...	...
Long-Term	65.2	...	80.7	42.9	30.0	20.0	600.0	40.0	...	78.7	17.2
Short-Term	2.2	...	2.7	36.0	30.0	16.6	498.3	39.6	...	75.8	17.6
Transitional	4.9	...	6.0	...	...	...	...	...	...	...	...
To Less Intensive Smoking	4.9	...	6.0	41.2	30.0	13.3	399.9	61.6	...	70.8	18.2
Unclassified	1.7	...	2.2	...	...	...	...	...	...	...	...

Note. SD = some-day; ED = every-day.

^aProduct of number of days and number of cigarettes per smoking day.

^bSmoking on a fairly regular basis.

is far larger, and perhaps more stable, than we believed just over a decade ago.

We also found that SD smokers were not predominantly young people just starting to smoke. Indeed, a maximum of 1 of 7 SD smokers fit this definition. Both SD and ED smokers averaged close to 40 years of age, and there were numerous SD smokers at all ages. The fact that SD smokers started smoking at a later age is consistent with findings that smokers who initiate smoking at later ages tend to smoke less intensively¹² and to be less nicotine dependent.¹³ Additionally, gender did not appear to affect SD versus ED smoking status.

One might expect low-income smokers to be SD smokers simply because they have less money to spend on cigarettes. However, we found that high-income smokers were more likely to smoke nondaily than smokers with lower income. One might conjecture that high-income individuals who are still smoking

have a better grasp that they should not be. Or perhaps high-income, higher-educated smokers are more likely to be in environments where smoking is restricted (e.g., white collar vs blue collar work environments).¹⁴

The fact that race significantly affected the odds of smoking on a nondaily basis—after controlling for income and education—suggests that there is a cultural effect that warrants further consideration. This appeared particularly relevant for Hispanics, and is consistent with literature investigating smoking patterns among Latinos and their levels of nicotine dependence.¹⁵ It is not clear how much of these racial effects was attributable to cultural differences and how much to differences in nicotine dependence.^{15,16}

This study has also shed light on how SD smokers ought to be defined. As noted above, our definitions of SD smoker subgroups were imperfect. Following Evans et al.,² we defined initiators as SD smokers who had smoked for

less than 5 years. This definition had the virtue of being conservative. It almost certainly included some noninitiators: almost one-third of all SD initiators reported having smoked daily in the past. Realistically, this group was likely to include smokers who might have been more appropriately characterized as transitional or even short-term stable-pattern SD smokers. Therefore, future research should consider employing a shorter period when defining initiators.

Another issue is whether “most day” smokers were reasonably categorized as SD smokers. As can be seen in Table 3, 15% of all SD smokers reported that they smoked on more than 20 days out of the past 30. Given the stigma associated with smoking and many smokers’ desire to quit, it is possible that these “most-day” smokers were actually ED smokers who would rather think of themselves otherwise. Alternatively, they may in fact not have smoked all days of the month,

yet had smoking patterns on those days they did smoke that were more similar to ED than to other SD smokers. However, as the findings in Table 3 indicate, there was a dramatic difference in smoking intensity between the self-reported SD smokers who smoked almost every day and the self-reported ED smokers. Daily smokers consumed 9.9 more cigarettes per smoking day than did “most-day” SD smokers. The daily consumption of “most-day” smokers was much closer to that of SD smokers who smoke fewer than 20 days than to that of ED smokers.

We conducted additional analysis (not shown) to determine whether self-reported “most-day” smokers were more similar to SD or to ED smokers in terms of sociodemographic variables. We found no evidence that self-reported SD smokers who smoked on most days were qualitatively different from those who smoked less frequently (findings available from authors upon request). We conclude, therefore, that the self-reported definition of SD smoking was sufficient to distinguish SD from ED smokers.

Although earlier studies have examined the stability of SD smoking patterns over time (at most 1 to 2 years),^{2–4} no previous study has attempted to explicitly define a stable-pattern SD smoker. One study documented that SD smokers who have never smoked on a daily basis tend to have more stable smoking patterns than those who have ever smoked daily, at least over a period of approximately 2 years.³ Another study limited its interest in SD smokers to those who have never smoked daily.¹⁷ In our sample, nearly 21% of all SD smokers who had never smoked daily were initiators, while another 54% were transitional smokers; only 11% were long-term stable-pattern SD smokers (results not shown). Our definition characterized stable-pattern SD smokers as those who had found a way to smoke on a nondaily basis over a sustained period. Indeed, one-quarter of our long-term stable-pattern SD smokers smoked daily in the past, although not within the last 5 years or more. We considered that they had established a stable pattern of SD smoking.

The addition of a handful of questions to the TUS would help resolve the appropriate classification of SD smokers. Specifically, it would be informative to know more about

SD smokers’ attempts to quit. With our current definitions, it is possible that some of the long-term supposedly stable-pattern smokers had quit entirely for some portion of the past 5 years.

Panel data would permit better characterization of the natural histories of SD smoking patterns, and would assist in understanding the health implications for the current generation of SD smokers. Such data would have limits too, however. In particular, although they would permit better characterization of contemporary SD smoking patterns, with the social acceptability of smoking constantly in flux, they might not be predictive of the behavior of future cohorts.

Untangling the complicated web of nondaily smoking patterns has direct public health relevance. With such a large proportion of smokers smoking on a nondaily basis, it is possible (but not necessarily the case) that SD smoking patterns will have important implications for the health toll of smoking in the future. If SD smoking other than initiation represents mostly different approaches to quitting, the health implications of SD smoking per se may be modest. (Recall that, even though it was the lowest number of all SD subgroups, over half of long-term stable-pattern SD smokers said they intended to quit within the next 6 months.) On the other hand, if a large proportion of SD smokers have truly settled into a pattern that will persist for many years, the health implications could be significant; whether they are negative or positive is unclear. If SD smoking substitutes for quitting, the implications are clearly negative. If, however, smokers who otherwise would be smoking daily manage to cut the frequency and intensity of their smoking, even a sustained pattern of SD smoking could represent significant risk reduction. In this study, for example, long-term stable-pattern SD smokers consumed an average of 76 cigarettes per month. In contrast, long-term stable-pattern ED smokers consumed 600 cigarettes each month. The potential health implications are self-evident.

Unfortunately, this study is unable to determine the motivation of this stable-pattern SD smoking population. Nor can it address the question of why the phenomenon of SD smoking has become so prevalent. We as-

sume, but cannot prove, that increasing restrictions on smoking in public places and workplaces account for much of the phenomenon.^{6–9} Or perhaps increased health awareness has encouraged many individuals who wish to continue smoking to do so on an SD basis. To address these questions, further research could compare measures of indoor smoking restrictions with the frequency of nondaily smoking. Our study also emphasizes the need for longitudinal data examining patterns of nondaily smoking. Finally, it points to the need to develop consensus on the concepts and definitions underlying categorization of types of SD smokers.

In April 2003, the Centers for Disease Control and Prevention reported a prevalence of SD smoking of 24.0% in 2001, based on Behavioral Risk Factor Surveillance System data.¹⁸ This estimate of prevalence is not strictly comparable to that reported in the present article because the former represents the median of state estimates, whereas the latter is a strict average from nationally representative data. However, the Behavioral Risk Factor Surveillance System data are consistent with the hypothesis that the proportion of smokers who smoke on a nondaily basis is increasing. The prevalence of SD smoking in the Behavioral Risk Factor Surveillance System data increased between 1996 and 2001 in 38 states and Washington, DC. ■

About the Authors

Kristen M. Hassmiller, Kenneth E. Warner, and David Mendez are with the University of Michigan, Ann Arbor. David T. Levy and Eduardo Romano are with the Center for Policy Analysis and Training, Pacific Institute for Research and Evaluation, Calverton, Md.

Requests for reprints should be sent to Kristen M. Hassmiller, MHSA, Department of Health Management and Policy, School of Public Health, University of Michigan, 109 S Observatory, Ann Arbor, MI 48109-2029 (e-mail: khassmil@umich.edu).

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Contributors

All of the authors were involved in reworking K.E. Warner’s original conception of the study into the final approach and assisted with interpretation of findings. K.E. Warner and D. Mendez supervised all aspects of implementation of the study. K.M. Hassmiller conducted all analyses and led the writing effort and all revisions. K.E. Warner assisted with the writing and, along with D. Mendez, D.T. Levy, and E. Romano, reviewed and revised drafts of the manuscript.

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Human Participant Protection

Participants in the survey were protected by procedures established by the US Census Bureau.

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