

Social Smoking Among Young Adults: Investigation of Intentions and Attempts to Quit

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Young adults (aged 18–25 years) represent the highest risk group for smoking, with 35.7% reporting having smoked cigarettes in the past 30 days.¹ Young adults are also more likely than are older adults to quit smoking,^{2,3} and young adult smoking cessation is particularly important because cessation before age 30 years avoids virtually all the long-term ill effects of smoking.⁴ In addition, young adult smoking uptake is important because, although most smokers try their first cigarette before age 18 years, the process of becoming an addicted smoker with typical adult consumption levels takes years, extending well into young adulthood.^{5–9} Evidence from previously secret tobacco industry documents reveals that the industry identified young adults as a vulnerable population susceptible to marketing strategies linking smoking with social activities, such as drinking alcohol and the club scene.¹⁰

A common pattern of smoking among young adults is nondaily smoking: Wortley et al., found that 19.9% of young adults reported smoking fewer than 30 days out of the month,¹¹ and a prevalent pattern of nondaily smoking is social smoking, which is generally thought of as limiting smoking to social situations.^{12–15} Compared with research on young adult daily smoking, research on social smoking is less common and usually limited to college samples.^{14,15} These findings suggest that social smokers smoke less and are less dependent on nicotine compared with regular smokers. Previous research also suggests that occasional smokers take 1 of 3 trajectories. Approximately 50% quit smoking, 25% transition to habitual smoking, and 25% continue to sustain their intermittent smoking pattern after a 7-year follow up.¹⁶ In this regard, about half of those who occasionally smoke continue to smoke for years.

Although the health consequences of social smoking have not been specifically studied, light smoking (fewer than 10 cigarettes per day) is associated with increased cardiovascular

Objectives. We compared the association between 3 different definitions of social smoking—a common pattern of smoking among young adults—and cessation indicators.

Methods. We used a Web-enabled, cross-sectional national survey of 1528 young adults (aged 18–25 years) from a panel (recruited by random-digit dialing) maintained by the research group Knowledge Networks.

Results. Among 455 smokers, 62% self-identified or behaved as social smokers. Compared with established smokers, self-identified social smokers were less likely to have cessation intentions (odds ratio [OR]=0.83; 95% confidence interval [CI]=0.70, 0.98) and cessation attempts lasting 1 month or longer (OR=0.54; 95% CI=0.45, 0.66). Behavioral social smokers (mainly or only smoking with others) were more likely than were self-identified social smokers (those who did not report these behavior patterns) to have cessation intentions (mainly OR_{mainly}=1.66; 95% CI=1.05, 2.63; and OR_{only}=2.02; 95% CI=1.02, 3.97) and cessation attempts (OR_{mainly}=4.33; 95% CI=2.68, 7.00; and OR_{only}=6.82; 95% CI=3.29, 14.15).

Conclusions. Self-identified social smokers may be considered a high-risk group with particular challenges for cessation. Behavioral social smokers may represent a group primed for cessation. Public health efforts should address these differences when developing smoking cessation strategies. (*Am J Public Health*. 2011;101:1291–1296. doi:10.2105/AJPH.2010.300012)

risk¹⁷ and an increased risk of cancer, respiratory tract infections, cataracts, impaired fertility, and fractures.¹⁸ Thus, clinicians should address these smoking patterns.

Published studies on social smoking are not consistent in the definitions and conceptualization of social smoking. Two studies defined social smoking as smokers who say they are social smokers.^{14,19} One study defined social smoking as having smoked in the past 30 days, but mainly with others.²⁰ Another study defined social smoking as smoking in the past 30 days, but mainly with others or equally alone as with others.¹⁵ Another approach has been to include smokers who smoke weekly, less than weekly, or smoke only when going out to clubs, bars, or restaurants.²¹ A more exclusive approach has been to restrict social smoking to those who report only smoking with others.¹²

These differing definitions have theoretical and methodological issues. Self-identification as a social smoker includes those who act like daily smokers, but deny being a smoker (i.e.,

identification only as a social smoker). The “mainly smokes with others” definition, like self-identification as a social smoker, may also include daily smokers. This inclusion may have important ramifications both for addiction assessments and cessation strategies. Limiting social smokers to those who “smoke only with others” is a strict behavioral definition that includes only a subset of those people who may think of themselves as social smokers; social smokers by this definition smoked fewer cigarettes, were more likely to think they could quit any time, and were less likely to think they were addicted or that their smoking was harmful to their health.¹² Given the differing operational definitions used to measure social smoking, it remains unclear whether social smokers are more apt to quit compared with regular smokers.

We aimed to (1) compare 3 different definitions of social smokers (self-identified social smokers, mainly smoking with others, only smoking with others) and (2) assess the

association between these different definitions of social smoking and quitting intentions and behaviors.

METHODS

Participants included 1528 young adults who completed a cross-sectional Internet survey. The respondents were a part of a Web-enabled panel maintained by the research company, Knowledge Networks, and were recruited from the US population via random-digit telephone dialing. Members of the panel were provided with free Internet access in exchange for completing surveys. Recruitment using random-digit dialing avoids the main limitation of Internet surveys that rely on volunteers: demographic groups most likely to have Internet access are overrepresented. By contrast, because they receive Internet access in exchange for their participation, people who are not regular Internet users before their recruitment are included in the Knowledge Networks panel. The Knowledge Networks panel has been tested against a random-digit-dialing telephone survey and a large volunteer Internet panel,²² and it matched the demographics, attitudes, and behaviors of the telephone survey more closely than a volunteer Internet panel, with higher survey completion rates.

Panel members aged 18 to 25 years were recruited for this study; of 1669 requests, 1325 completed surveys (79.3% response rate). In addition, 203 former panel members aged 18 to 25 years were recruited to achieve the desired sample size of at least 1500. All surveys were completed via the Internet between September and November 2005, and analysis was completed June 2008.

We used the standard adult definition of current smokers: those who reported that they had smoked at least 100 cigarettes in their lifetime and now smoke every day or some days. Current smokers were asked several questions regarding the social context of their smoking, intentions to quit, and quitting behaviors.

Dependent Variables

Intentions to quit. Current smokers were asked about any plans to quit smoking. Responses were dichotomously coded as 0=no definite plans to quit and 1=definite plans to

quit within 6 months (includes those who plan to quit within 1 month and those who plan to quit within 6 months).

Quitting behaviors. Current smokers were asked whether they had intentionally quit smoking for a month or longer during the past year. Responses were dichotomously coded as 0=no and 1=yes.

Independent Variables

Demographics. Respondents' gender was coded 0=male and 1=female. Highest level of education was coded from 0=less than high school to 3=bachelor's degree or higher. Annual income level was coded as 0=less than \$7500, 1=\$7500–\$14 999, 2=\$15 000–\$29 999, 3=\$30 000–\$39 999, 4=\$40 000–\$59 999, and 5=\$60 000 or more. Race/ethnicity (White, African American, other non-Hispanic, Hispanic American, biracial non-Hispanic) was entered as a categorical variable for all analyses.

Social smoker, self-identified. Current smokers were asked whether they considered themselves social smokers. To isolate the practice of identifying with the social smoker label but not necessarily behaving this way, respondents who reported social smoking behaviors (e.g., smokes mainly with others or smokes only with others) were eliminated from this group. Responses were coded 0=established smoker (no self-identification and no social smoking behaviors), and 1=self-identified social smoker.

Behavioral social smoker who smokes mainly with others. Current smokers were asked whether they smoked alone, smoked mainly with others, or smoked equally alone and with others. Responses were recoded as 0=smokes alone or smokes equally alone and with others, and 1=social smoker who smokes mainly with others.

Behavioral social smoker who smokes only with others. Smoking participants were asked whether they only smoked with others. Responses were coded 0=smokes alone and 1=social smoker who smokes only with others.

Statistical Analysis

We used univariate and multivariate logistic regression to examine the relationship between quitting behaviors and intentions to quit as dependent variables and social smoking, gender, education (categorical), income level, and

ethnicity as independent variables. We compared self-identified social smokers (excluding behavioral social smokers) with established smokers. We compared behavioral social smokers (i.e., smokes mainly or only with others) with smokers who smoke alone, which may include both established smokers and self-identified social smokers. Logit plots of the 6 categories of income and the logit of intentions to quit and quitting behavior demonstrated linear relationships, so income was treated as a continuous predictor. The 3 different definitions of social smoking were entered in separate analyses. We performed all calculations with SPSS version 15.0 (SPSS, Inc, Chicago, IL).

RESULTS

The total sample was equally distributed between men and women. The sample was ethnically diverse, with 61% identifying themselves as White American, 13.9% as African American, 18.3% as Hispanic American, 3.9% as other non-Hispanic, and 3.0% as biracial non-Hispanic. Most participants had a high school education, with 30.5% reporting a high school degree as their highest level of education, 36.0% with some college, and 12.5% having obtained a bachelor's degree or higher. With regard to employment and income level, 57.5% of the respondents were paid employees, and the median annual income was between \$25 000 and \$35 000. The smokers in this sample did not differ in income, race, or education from the total sample.

Smoking Prevalence and Social Smoking Definitions

Overall smoking prevalence in this sample was 30% (n=455). All measures of social smoking were asked of young adult smokers. Of all smokers, 62% (n=282) either identified themselves as social smokers or behaved as a social smoker (i.e., smoked only with others or mainly with others). The remaining 38% (n=173) of the smokers who did not identify themselves as social smokers or report social smoking behaviors were categorized as established smokers. When we allowed for overlap between different social smoking categories, 54% of smokers (n=244) self-identified as social smokers, 30% (n=133) reported

smoking mainly with others, and 10% (n=47) reported smoking only with others. Table 1 depicts the number of respondents who fit the different definitions of social smoking and the number belonging to more than 1 category.

We found an overlap between self-identified and behavioral social smokers. Within the group of smokers who self-identified as social smokers, 43% (n=105) also reported social smoking behaviors (i.e., smoking mainly with others or smoking only with others). Specifically, 36 participants self-identified as social smokers and reported both smoking mainly and only with others, 61 self-identified as social smokers and reported smoking mainly with others, and 8 self-identified as social smokers and reported smoking only with others. By contrast, the majority of behavioral social smokers (73%; n=105), also self-identified as social smokers. In subsequent analyses of self-identified social smokers, we examined quitting intentions and behaviors of those who only self-identified as social smokers (but did not report social smoking behaviors).

The 2 types of social smoking behaviors, smoking mainly with others and smoking only with others, demonstrated overlap as well. Thirty-seven of the 133 respondents who

reported mainly smoking with others also reported only smoking with others.

Social Smoking and Intentions to Quit

The relationship between social smoking and intentions to quit differed by definitions of social smoking (Table 2). The unadjusted odds ratio (OR) of intentions to quit in the next 6 months was not significant for those who self-identified as social smokers compared with those who were established smokers, but the adjusted odds ratio (AOR) of having intentions to quit was significant (AOR=0.83; 95% confidence interval [CI]=0.70, 0.98).

We saw the opposite relationship with behavioral social smoking definitions. Smoking mainly with others and smoking only with others were positively related to intentions to quit within the next 6 months. The unadjusted OR of having intentions to quit was not significant in univariate analysis, but multivariate analysis showed a significant relationship between intentions to quit and smoking mainly with others, with an AOR of 1.66 (95% CI=1.05, 2.63) for those who smoke mainly with others, compared with all other smokers (those who smoke alone).

We saw a similar relationship with smoking only with others. The unadjusted OR was not significant, but in the multivariate analysis,

smoking only with others was significantly associated with intentions to quit, with an AOR of 2.02 (95% CI=1.02, 3.97) for those who smoke only with others, compared with all other smokers (who smoke alone sometimes).

Significant racial/ethnic differences in intentions to quit also were shown. Across all 3 multivariate analyses predicting intentions to quit, African American smokers, regardless of social smoking status, consistently showed greater intentions to quit compared with Whites, with ORs ranging from 2.53 (95% CI=1.28, 4.98) to 2.70 (95% CI=1.36, 5.36). There were no other significant racial/ethnic, gender, education, or income differences.

Social Smoking and Quitting Behaviors

All 3 social smoking definitions were significantly related to quitting for 1 month or longer, although in different directions (Table 3). Similar to results seen with intentions to quit, self-identification as a social smoker (without smoking mainly or only with others) was negatively related to quitting for 1 month or longer. Compared with established smokers, the unadjusted OR of quitting for 1 month or longer for self-identified social smokers was 0.50 (95% CI=0.42, 0.60). This relationship remained significant in multivariate analyses; the AOR of quitting was 0.54 (95% CI=0.45, 0.66).

We saw the inverse relationship with behavioral social smoking. Smoking mainly and only with others was positively related to quitting smoking for a month or longer in both univariate and multivariate analyses. The AOR of quitting smoking was 4.33 (95% CI=2.68, 7.00) for those who mainly smoke with others, compared with all other smokers. The AOR of quitting for 1 month or longer was 6.82 (95% CI=3.29, 14.15) for those who only smoke with others, compared with other smokers.

Income level was also significantly related to quitting behaviors. In all 3 multivariate analyses, the ORs of making a quit attempt ranged from 1.23 to 1.24 for each level increase in income, independent of social smoking status. Hispanic Americans also made more quit attempts than did Whites, with ORs ranging from 2.06 to 2.88 in all multivariate analyses.

TABLE 1—Frequency of Smoking Behaviors Across Smoking Definitions in National Survey of Young Adults Aged 18–25 Years (n=1528): United States, 2005

	No.
Current smokers ^a	455
Types of current smokers	
Established smokers: responded “no” to social smoking indicators	173
Social smoker: responded “yes” to at least 1 social smoking item	282
Types of social smokers ^b	
Self-identified social smokers	244
Behavioral social smoker	180
Behavioral social smoker: smokes mainly with others	133
Behavioral social smoker: smokes only with others	47
Types of social smokers ^c	
Self-identified social smokers	139
Behavioral social smoker: smokes mainly or only with others	38
Overlap between social smoking types: self-identified and smokes mainly with others or smokes only with others	105

^a100 or more lifetime cigarettes and smokes every day or some days.

^bInclusive of other smoking types.

^cExclusive of other smoking types.

TABLE 2—Predictors of Intentions to Quit Within the Next 6 Months Among Young Surveyed Adults Aged 18–25 Years: United States, 2005

Characteristic	OR (95% CI)	Smokes Only With Others, ^a AOR (95% CI)	Smokes Mainly With Others, ^a AOR (95% CI)	Self-Identified Social Smoker, ^{a,b} AOR (95% CI)
Smokes only with others	1.77 (0.94, 3.34)	2.02* (1.02, 3.97)		
Smokes mainly with others	1.50 (0.99, 2.27)		1.66* (1.05, 2.63)	
Self-identified social smoker	0.88 (0.75, 1.02)			0.83* (0.70, 0.98)
Men	0.79 (0.54, 1.16)	0.74 (0.49, 1.10)	0.76 (0.51, 1.14)	0.75 (0.50, 1.12)
Highest-level education				
Less than high school (Ref)	1.00	1.00	1.00	1.00
High school	0.56* (0.34, 0.92)	0.64 (0.38, 1.07)	0.60 (0.35, 1.01)	0.61 (0.6, 1.03)
Some college	1.17 (0.71, 1.90)	1.48 (0.88, 2.49)	1.39 (0.83, 2.35)	1.41 (0.83, 2.37)
Bachelor's degree or more	1.14 (0.52, 2.49)	1.26 (0.54, 2.93)	1.23 (0.53, 2.86)	1.23 (0.53, 2.86)
Annual income ^c	0.95* (0.91, 0.99)	0.90 (0.79, 1.03)	0.91 (0.80, 1.03)	0.96 (0.92, 1.01)
Race/ethnicity				
White (Ref)	1.00	1.00	1.00	1.00
African American	2.91* (1.57, 5.39)	2.53* (1.28, 4.98)	2.58* (1.31, 5.01)	2.70* (1.36, 5.36)
Other non-Hispanic	0.51 (0.12, 2.22)	0.55 (0.12, 2.55)	0.62 (0.13, 2.84)	0.59 (0.13, 2.68)
Hispanic American	1.36 (0.83, 2.24)	1.60 (0.94, 2.72)	1.45 (0.84, 2.50)	1.52 (0.89, 2.60)
Biracial non-Hispanic	1.12 (0.37, 3.43)	1.34 (0.43, 4.21)	1.27 (0.40, 3.99)	1.29 (0.41, 4.05)

Notes. AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio.

^aAdjusted for all other listed variables.

^bCoded categories are: 0 = established smoker; 1 = self-identified social smoker.

^cCoded as 0 = less than \$7500, 1 = \$7500–\$14999, 2 = \$15 000–\$29 999, 3 = \$30 000–\$39 999, 4 = \$40 000–\$59 999, and 5 = \$60 000 or more.

**P* < .05.

DISCUSSION

We are the first to our knowledge to directly compare different definitions of social smoking used in previous research. In our nationally represented sample of young adult smokers, social smoking was highly prevalent. Differences in conceptualization of social smoking led to different results in terms of intentions to quit and quitting behaviors. Self-identification as a social smoker without reporting social smoking behaviors was negatively related to having intentions to quit and quitting smoking for 1 month or more. By contrast, behavioral social smokers—those who reported that they mainly smoke with others or only smoke with others—were more likely to have intentions to quit and make quit attempts for 1 month or longer.

In addition to differences in social smoking indicators, the data also demonstrated racial/ethnic differences in quitting intentions and behaviors. Compared with White young adults, African American young adults were significantly more likely to have intentions to quit,

but were less likely to have made a quit attempt. The reverse was true for Hispanic young adults. Compared with White young adults, these participants had lower intentions to quit, but more attempts to quit for 1 month or longer. These results are congruent with existing literature in tobacco-related disparities, particularly the disparities in nicotine addiction for African Americans.^{23,24}

These results have some similarities and distinct differences from previously published estimates of social smoking. The total number of respondents who identified themselves as social smokers (54%) is similar to previously published estimates of self-identified social smoking (56%).¹⁴ Although only we separated self-identified social smokers from behavioral social smokers, behavioral social smoking in our study was lower than were the estimates reported in previous studies. Using the “mainly smoking with others” definition, we found social smoking to be 30% of the young adult smoking population, lower than the previously published estimate of 51%.¹⁵ We found 10% of the young adult smoking population “only smokes with

others” compared with a previous report of 30%.¹² The earlier study was limited to a California sample; California has an aggressive tobacco control program, which may be related to the higher rates of social smoking within the smoking population.

Although social smoking behaviors are not limited to young adults,²⁵ our results suggest that social smoking is a particularly important behavior to address in the young adult population. In research and practice, it is important to identify and treat the self-identified social smoker who does not exhibit social smoking behavioral patterns differently than one would identify and treat the behavioral social smoker. The self-identified social smokers may pose a particular challenge for cessation. These “social smokers” may not regard themselves as “real smokers”; the “social smoker” label may represent an effort to deny or discount the risks associated with smoking. Because they are “only” socially smoking, they may not feel a need to quit in the near future. Traditional cessation messages are unlikely to appeal to self-identified social smokers because they do not consider themselves

TABLE 3—Predictors of Quitting Smoking for 1 Month or Longer Among Surveyed Young Adults Aged 18–25 Years: United States, 2005

Characteristic	OR (95% CI)	Smokes Only With Others, ^a AOR (95% CI)	Smokes Mainly With Others, ^a AOR (95% CI)	Self-Identified Social Smoker, ^{a,b} AOR (95% CI)
Smokes only with others	7.35* (3.76, 14.37)*	6.82* (3.29, 14.15)		
Smokes mainly with others	5.41* (3.47, 8.42)		4.33* (2.68, 7.00)	
Self-identified social smoker	0.50* (0.42, 0.60)			0.54* (0.45, 0.66)
Men	0.95 (0.63, 1.42)	0.98 (0.62, 1.54)	1.14 (0.72, 1.81)	1.12 (0.70, 1.78)
Highest-level education				
Less than high school (Ref)	1.00	1.00	1.00	1.00
High school	1.91* (1.12, 3.28)*	1.81 (0.96, 3.29)	1.44 (0.79, 2.65)	1.52 (0.83, 2.78)
Some college	1.20 (0.68, 2.14)	1.41 (0.73, 2.70)	1.11 (0.58, 2.14)	1.10 (0.57, 2.12)
Bachelor's degree or higher	2.22 (0.97, 5.09)	1.32 (0.49, 3.53)	1.18 (0.46, 3.02)	1.11 (0.44, 2.83)
Annual income ^c	1.10* (1.05, 1.15)	1.23* (1.07, 1.43)	1.24* (1.07, 1.43)	1.23* (1.06, 1.42)
Ethnicity				
White (Ref)	1.00	1.00	1.00	1.00
African American	0.23* (0.08, 0.67)	0.48 (0.16, 1.46)	0.48 (0.15, 1.50)	0.55 (0.18, 1.73)
Other non-Hispanic	0.71 (0.15, 3.27)	0.51 (0.10, 2.48)	0.69 (0.14, 3.43)	0.59 (0.12, 2.90)
Hispanic American	2.83* (1.71, 4.69)	2.88* (1.65, 5.04)	2.06* (1.16, 3.68)	2.26* (1.26, 4.05)
Biracial non-Hispanic	2.37 (0.79, 7.11)	3.24* (1.02, 10.27)	2.76 (0.82, 9.25)	2.85 (0.85, 9.61)

Notes. AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio.

^aAdjusted for all other listed variables.

^bCoded categories are: 0 = established smoker; 1 = self-identified social smoker.

^cCoded as 0 = less than \$7500; 1 = \$7500–\$14999; 2 = \$15 000–\$29999; 3 = \$30 000–\$39999; 4 = \$40 000–\$59999; 5 = \$60 000 or more.

* $P < .05$.

smokers. We found that these smokers were significantly less likely to quit. This finding differs from previous studies that found that self-identified social smoking was unrelated to smokers' hopes to quit.¹⁴ This contrast in findings may be attributable to the fact that we eliminated behavioral social smokers from the self-identified social smoking sample.

Alternatively, behavioral social smokers may represent a population of smokers who are primed to quit smoking: they are more likely to have concrete intentions to quit and are able to abstain from cigarette smoking for at least 1 month. This finding contrasts with the finding of a previous study on college students that showed no relationship between behavioral social smoking and intentions to quit or quit attempts.¹⁵ Although all of the current smokers in our study were "established" smokers of more than 100 cigarettes in their lifetime, the behavioral social smokers may have not yet progressed to a regular smoking pattern and may still quit relatively easily. This group may be more receptive to advice on how to quit smoking. Some longitudinal evidence exists that few occasional smokers progress to daily smoking and that

many report quitting after a 4-year follow-up.¹² This finding has led to the suggestion that social smoking may keep smokers from becoming addicted to nicotine. Alternatively, this group may represent former daily smokers who may actively be in the process of quitting, using social smoking behavior as a transitional activity to complete cessation.

Both definitions of social smoking may be important in clinical practice and public health interventions, as well as in research. In particular, screening for social smoking behavior may identify more young adult smokers who fail to identify as smokers. If one answers the question "Are you a social smoker?" affirmatively, it is important to follow up with a behavioral question, such as "Do you only smoke when others are smoking?" Young adults who only self-identify as social smokers without social smoking behavior may be a particular challenge for clinicians, whereas identifying those who behave as social smokers may be a good opportunity to encourage complete cessation.

In addition, the differences found among the 3 definitions of social smoking highlight a need

for researchers to use consistent definitions of social smoking to allow better comparisons across studies. We highlight the difference between self-identification only as a social smoker and behaviors associated with social smoking. Although both significantly contribute to our understanding of young adult smoking, they are conceptually different and are related to smoking behaviors in different ways.

Smoking cessation in young adults—particularly among social smokers—is both a challenge and an opportunity. The majority of young adult smokers identified themselves as social smokers. Self-identification only as a social smoker may be a characteristic of those less likely to quit smoking, whereas social smoking behaviors are associated with more quitting behavior. Depending on how social smoker is defined, different cessation patterns are observed. Clinicians and researchers need to address the differences between self-identification and behavior as a social smoker to develop more effective smoking cessation strategies tailored to these 2 distinct groups. ■

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Contributors

A. V. Song prepared the first draft of the article. P. M. Ling designed the survey and directed the data collection. Both authors participated in conducting the statistical analysis and revised drafts of the article. Both authors have full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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Human Participant Protection

The survey protocol was approved by the University of California, San Francisco, Committee on Human Research.

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