Prevalence of daily and experimental smoking among University of Wisconsin-Madison undergraduates, 1989-1993

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Limited information is available on smoking among college students. This study surveyed smoking prevalence and frequency among University of Wisconsin-Madison undergraduates aged 17 to 22 (n = 6,069) during the years 1989 through 1993. Sampling was conducted before and after the implementation of a smoke-free campus policy. Daily smoking remained constant across the 5 years at just under 10% of the sample; males showed a trend toward increased daily smoking (7.8% to 11.7%), while females showed a declining trend (10.2% to 8.4%). Additionally, 27% engaged in experimental smoking (smoking every few days, weeks, or months), resulting in a disturbing overall rate of tobacco use: about 37% of all students. These data indicate a need for more directed efforts to help university students overcome the threat of tobacco addiction. *Wis Med J.1993;92(11):605-608.*

CIGARETTE SMOKING remains the leading preventable cause of morbidity and mortality in the United States, claiming approximately 420,000 lives each year.[1] Nearly three decades of concerted public health efforts to reduce smoking, however, have had some positive effects on the prevalence of smoking. No where is this more evident than in an analysis of smoking prevalence by educational status. In 1966, 42.5% of persons with some college education and 33.7% of college graduates smoked.[2] By 1991, those rates had dropped to 23.4% and 13.6%, respectively.[2] It has been projected that by the turn of the century, fewer than 1 in 10 college graduates will smoke cigarettes.[3]

Few studies, however, have specifically addressed smoking among college students. It is estimated that approximately 2 million college students smoke currently.[4] Moreover, there is evidence that the number of collegiate smokers has increased in the last decade, especially among young women who begin to smoke during their college years, often as a weight control strategy.[5] Since public health campaigns about the hazards of smoking have been most effective with highly educated individuals, college students represent a group that will provide critical information about overall tobacco cessation and prevention interventions.

This study reports the results of a smoking prevalence survey among University of Wisconsin (UW)-Madison students, sampled between 1989 and 1993. This sample is unique in that it included prevalence information collected before and after the implementation of a smokefree policy for all buildings on the UW-Madison campus.

Methods

Subjects. Subjects (n = 6297) were students enrolled in introductory psychology courses at the UW-Madison in the fall 1989, fall 1990, spring 1992, or spring 1993 semesters. The introductory psychology course is a large, multiple-section survey course. Students registering for the course are typically freshmen or sophomores, but the course is open to any undergraduate or

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graduate student. Approximately 30% of all undergraduates at UW-Madison take a course in introductory psychology.

The subjects were assigned a numerical code that was stamped on their questionnaires; no names or identifying information were included on the questionnaires to ensure confidentiality of responses.

Analyses were restricted to subjects between the ages of 17 and 22 (the undergraduate target population); excluding cases with missing data, this left 6,069 of 6,265 cases (96.9%) available for analysis.

Study design. As part of a voluntary mass testing assessment, subjects answered a 15-item questionnaire. The questionnaire elicited information regarding the age, sex, and smoking status of the respondent. Subjects were classified as "daily smokers," "non-smokers" (those who had never tried a cigarette, or had tried but reported no current smoking), or "experimenting smokers" (those who had tried cigarettes and reported smoking every few days, weeks, or months).

Results

Across the four assessment intervals, the composition of the sample remained remarkably constant. Females accounted for 55.4% of the sample; the mean age was 18.5 years for all subjects.

The table presents the data from the four assessment intervals grouped by gender and pattern of smoking. Overall, just under 10% of the sample reported daily smoking but an interesting pattern emerges when gender is considered. Males displayed a steady increase in the prevalence of daily smoking from 1989 to 1993 (7.8% to 11.7%; Fig 1); females displayed a decline in daily smoking during the same period (10.2% to 8.4%), although this trend was less pronounced.

Regarding experimental smoking, a more disturbing pattern emerges. Experimental smoking varied from 25% in 1989 to 26.9% in 1993. Overall, 26.9% engaged in experimental smoking. No consistent trends were noted when these data were analyzed by gender (Fig 2). When daily and experimental smoking are combined, a total of 36.6% of UW students smoke cigarettes.

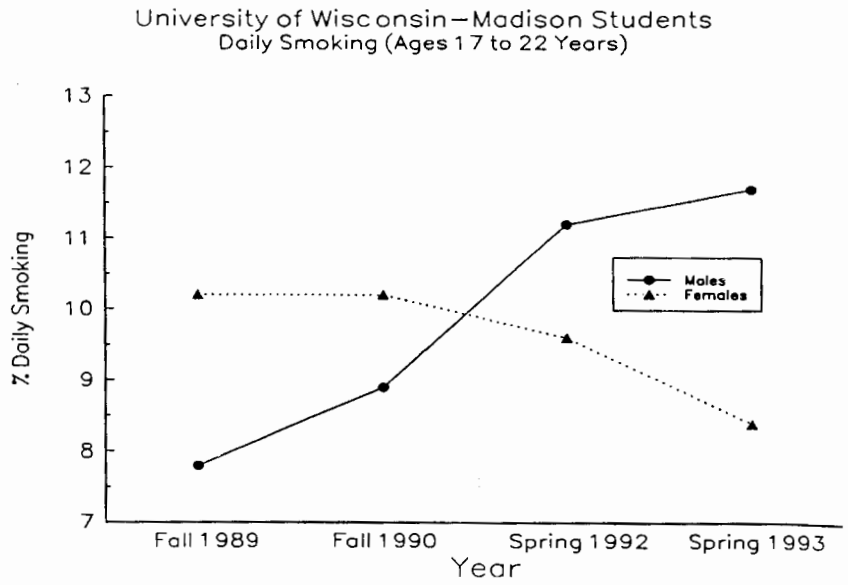

Fig 1.--Daily smoking among UW-Madison students (ages 17 to 22 years) as a function of gender.

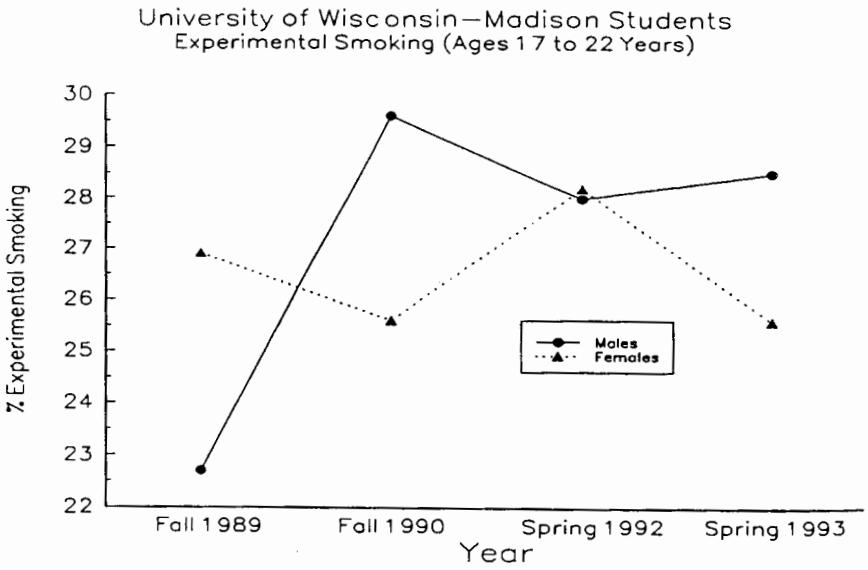

Fig 2.--Experimental smoking among UW-Madison students (ages 17 to 22 years) as a function of gender.

Discussion

The results of this study provide interesting new information on the prevalence of smoking among university students. During the 5-years in which surveys were conducted, about 37% reported at least some smoking. This included just under 10% of students who reported they were daily smokers, a figure in ac-

cord with national trend projections.[3]

More disturbing is the prevalence of experimental smoking among this university population. Some 27% of students between the ages of 17 and 22 years reported smoking during periods that ranged from every few months to every few days. Given the powerfully addictive nature of nicotine, this experimentation carries significant risk for future addiction.[6]

Between the fall 1990 and spring 1992 assessment intervals, the UW-Madison campus became the first Big Ten campus to go smoke-free. Our data demonstrate little effect on smoking prevalence following the ban on smoking in campus buildings.

This should be considered in context. Studies of hospitals[7] and worksites[8] that have gone smoke-free have demonstrated only modest declines in the prevalence of daily smoking outside of the worksite.

Another reason for the lack of effect of the smoke-free policy on daily smoking relates to the extent of the UW smoke-free policy. Specifically, the policy covered all university buildings, but excluded the private living quarters of students on campus (dormitory rooms and other student housing). Since students are typically in smoke-free academic buildings for little more than an hour at a time, this university ban may have had less immediate effect on their behavior than a corresponding worksite ban. The expansion of the smoke-free policy to include private living quarters on campus, including dormitory rooms, may be more likely to influence daily smokers, since students typically spend more time in their living quarters than in other campus buildings.

It should be stressed, however, that the major intent of a smoke-free policy is to ensure clean indoor air for everyone; decreases in smoking prevalence are secondary benefits of such a positive public health measure.

The results of these ongoing surveys also raise some important concerns. As noted above, the rate of experimental smoking among this college sample is very high, particularly given the amount of information students are exposed to regarding the hazards of smoking. Second, the trend toward increasing numbers of male undergraduate smokers, if sustained, would represent a reverse in a positive historical trend.

These trends suggest a flat rate of daily smoking among this sample of college students from 1989 to 1993, in sharp contrast to the rapid declines in smoking prevalence observed among college-educated adults prior to 1989. From 1965 to

Prevalence of daily, experimental, and non-smoking among UW-Madison undergraduates (ages 17-22) during, 1989-1993.

	Males (n=2643)				Females (n=3293)				All (n=5963)
	Fall '89 (n=714)	Fall '90 (n=869)	Spr. '92 (n=634)	Spr. '93 (n=426)	Fall '89 (n=905)	Fall '90 (n=1023)	Spr. '92 (n=877)	Spr. '93 (n=488)	'89-'93
Daily Smokers	7.8 6.0 - 10.0	8.9 7.1 - 10.9	11.2 8.9 - 13.8	11.7 8.9 - 15.0	10.2 8.3 - 12.2	10.2 8.4 - 12.1	9.6 7.8 - 11.6	8.4 6.2 - 11.1	9.7 8.9 - 10.4
Non-Smokers	69.5 65.9 - 72.7	61.6 58.2 - 64.7	60.9 57.0 - 64.5	59.9 55.0 - 64.3	63.0 59.7 - 66.0	64.1 61.1 - 67.0	62.3 58.9 - 65.4	66.0 61.6 - 69.9	63.4 62.2 - 64.6
Experimental Smokers	22.7 19.7 - 25.8	29.6 26.6 - 32.6	27.9 24.5 - 31.5	28.4 24.2 - 32.7	26.9 24.0 - 29.8	25.7 23.1 - 28.4	28.2 25.2 - 31.2	25.6 21.8 - 29.6	26.9 25.8 - 28.1
Frequency Groupings For Experimental Smokers									
Every Few Days	4.9 3.5 - 6.7	7.8 6.2 - 9.7	9.0 6.9 - 11.4	5.9 3.9 - 8.4	9.2 7.4 - 11.2	6.8 5.4 - 8.5	8.8 7.0 - 10.8	7.8 5.6 - 10.4	7.7 7.0 - 8.4
Every Few Weeks	8.8 6.9 - 11.1	7.4 5.8 - 9.2	8.7 6.7 - 11.0	9.2 6.7 - 12.1	7.6 6.0 - 9.5	7.6 6.1 - 9.4	9.0 7.2 - 11.0	7.6 5.5 - 10.2	8.2 7.5 - 8.9
Every Few Months	9.0 7.0 - 11.2	14.4 12.2 - 16.8	10.3 8.1 - 12.8	13.4 10.4 - 16.8	10.1 8.2 - 12.1	11.2 9.4 - 13.3	10.4 8.5 - 12.5	10.2 7.8 - 13.1	11.1 10.3 - 11.9

Note: Ranged figures in each cell represent 95% confidence intervals.

1985, smoking prevalence among adults with some college education declined at a rate of 0.70 percentage points per year.[3] During the same time period, smoking prevalence among college graduates declined at a rate of 0.76 percentage points per year.[3] The UW-Madison data may herald a new phase in smoking prevalence rates with the identification of a hard-core 10% of college students who will become daily smokers. Clearly, much more remains to be done in the educational, policy, and treatment realms to help university students overcome the powerful threat of tobacco addiction.

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