Tobacco Use Among School Adolescents: National Sociodemographic Risk Profiles

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Abstract:

This article examines sociodemographic risk and smoking and smokeless tobacco use among a national sample of school-based adolescents who participated in the 1993 Teenage Attitudes and Practices Survey. Findings show that six sociodemographic factors (age, gender, ethnicity, income, type of urban area, and region) were significantly associated with cigarette smoking and smokeless tobacco use. Of all smokeless tobacco users, 71.5 percent were also regular smokers or experimental smokers. This article highlights the need to pro-vide comprehensive tobacco use prevention programs that focus on both cigarette and smokeless tobacco use among school adolescents.

Article:

As documented extensively by the Surgeon General, cigarette smoking is causally linked to lung cancer and other fatal malignancies, atherosclerosis and coronary heart disease, chronic obstructive pulmonary disease, and other serious health consequences (U.S. Department of Health and Human Services, 1989). Despite widespread health warnings on tobacco products and a continuing decline in the social acceptability of smoking, a large number of young people continue to initiate smoking. Currently it is estimated that over three million adolescents smoke cigarettes (U.S. Department of Health and Human Services, 1994).

Smokeless tobacco use, including use of chewing tobacco and snuff, is associated with health risks that range from halitosis and gum recession to severe health problems such as verrucous carcinoma and oral cancer (National Cancer Institute, 1992). While smokeless tobacco use among adolescents is not as prevalent as cigarette smoking, its use, however, among high school males has become markedly more prevalent in the past two decades with over one million adolescent males currently using smokeless tobacco (U.S. Department of Health and Human Services, 1994). In some states, nearly one out of three high school males use smokeless tobacco (U.S. Department of Health and Human Services, 1994).

A series of National Teenage Tobacco Surveys (NTTS) have been conducted over the past 25 years in order to profile national trends and patterns of adolescent tobacco use (U.S. Department of Health and Human Services, 1994). Among these surveys, data from the Monitoring the Future Project in 1992 (MTFP) found that among 10th graders, more males than females reported that they currently smoke cigarettes (29.2 percent vs. 26.1 percent); substantially more whites than African Americans reported that they smoked (31.8 percent vs. 8.2 percent). In addition, the North Central region had the highest smoking rate (31.7 percent), while the West had the lowest (22.8 percent) (cited in U.S. Department of Health and Human Services, 1994). Data from the Youth Risk Behavior Survey in 1991 on students in grades 9 through 12 yielded similar patterns to the MTFP except differences were found regarding gender rates. The percentage of current smokers for males and females was similar (27.6 percent vs. 27.3 percent) (cited in U.S. Department of Health and Human Services, 1994). In addition, the YRBS found that the percentage of Hispanic adolescent smokers was quite high (25.3 percent). The 1991 National Household Surveys on Drug Abuse (NHSDA) reported that among adolescents aged 12 to 18 years, slightly more males than females were smokers (13.5 percent vs. 12.8 percent), while the percentage of white smokers was higher than Hispanic adolescents (10.1 percent), followed by African American adolescents (5.3 percent)(cited in U.S. Department of Health and Human Services, 1994).

The most recent NTTS is the 1993 Teenage Attitudes and Practices Survey (TAPS) conducted by the National Center for Health Statistics (National Center for Health Statistics, 1994). The 1993 TAPS is central in expanding our knowledge of adolescent tobacco use. The first step in obtaining a greater understanding is to provide a sociodemographic profile of adolescent tobacco use. And to complement prior NTTS, emphasis on a school based population will provide an immediate profile of adolescents at higher risk for using tobacco products. This information can be used to increase the efficacy of tobacco use prevention interventions. As such, the purpose of this article is to examine sociodemographic risk profiles of tobacco use among a national sample of school based adolescents who participated in the TAPS (National Center for Health statistics, 1994).

Method

The 1993 TAPS was conducted by the National Center for Health Statistics (NCHS), in collaboration with the Centers for Disease Control's Office on Smoking and Health (OSH), the National Cancer Institute (NCI), and the American Cancer Society. A national representative sample of 14,725 adolescents between the ages of 12 and 22 were surveyed. This survey achieved an 89 percent response rate with 12,952 adolescents completing the interview. This article selected adolescents between the ages of 12 and 18 who were going to school at the time of the survey (N=8,725).

Data Collection

The TAPS used computer assisted telephone interviewing (CATI) for data collection. The TAPS also included a mail component to contact teens living in non-telephone households and teens with telephones who did not respond by the end of CATI interviewing. The inter-view obtained information on tobacco use, including measures which assessed sociodemographic background. Regular smokers were defined as those who were currently smoking, had smoked in the past 30 days and had smoked at least 100 cigarettes in their lifetime. Experimental smokers were defined as those who had smoked at least one whole cigarette but had not smoked 100 cigarettes in their lifetime and had not smoked in the past 30 days. Nonsmokers were defined as those who had never smoked a whole cigarette. For smokeless tobacco, adolescents were categorized as regular users, non-regular users, and non-users. Regular smokeless tobacco users were defined as those who used regularly and used within the past month. Non-regular smokeless tobacco users were those who used occasionally, including those adolescents who tried smokeless tobacco once. Smokeless tobacco non-users were defined as those adolescents who had never used smokeless tobacco products.

Eight sociodemographic variables were examined: age (12 to 14, 15 to 16, and 17 to 18); ethnicity (white, black, Hispanic, other); income (below poverty level, above poverty level), highest education of responsible adult family member (fewer than 12 years, 12 years, more than 12 years); living arrangement (single parent, both parents); metropolitan statistical area (MSA: central city, other MSA, non-MSA); and region (North-east, Midwest, South, West). Frequencies, percentages, and chi square statistical procedures were used to examine the associations between sociodemographic variables and tobacco use.

Results

Overall Prevalence of Tobacco Use

For all adolescents surveyed, 71.1 percent were non-smokers, 19.6 percent were experimental smokers, and 9.3 percent were regular smokers. For smokeless tobacco, 87.3 percent were non-users, 10.4 percent were non-regular users, and 2.4 percent were regular users. For those smokeless tobacco users, 71.5 percent were also regular smokers or experimental smokers.

Cigarette Smoking

Table 1 shows the prevalence of cigarette smoking by levels of sociodemographic variables. Six out of eight variables were associated with smoking status. Regular smoking prevalence for the 15 to 16 age group (15.3 percent) and the 17 to [8 age group (20.0 percent) were substantially higher than the 12 to 14 age group (2.4 percent). The same trend was also ob-served for experimental smoking, the prevalence for the 15 to 16 age group (26.9 percent) and the 17 to 18 age group (30.7 percent) were substantially higher than the 12 to L4 age

group (11.8 percent). Ethnicity was strongly associated with cigarette smoking. Among ethnic groups, white adolescents had the highest smoking prevalence (11.6 percent), followed by Hispanics (7.3 percent). Blacks ranked the lowest in regular smoking (3.3 percent). Adolescents from above poverty level families had a higher regular smoking rate than those of below poverty level families (10.0 percent vs 6.3 percent). Geographically, adolescents from non-central cities had the highest regular smoking rate (10.2 percent), followed by adolescents living in non-MSAs (9.6 percent), while the central city had the lowest regular smoking, rate (7.7 per-cent). As for region, the northeast and midwest had the highest regular smoking rates, followed by the south (7.4 percent) and the west (8.4 percent).

There was little difference between male and female smoking prevalence rates. The education of the responsible adult family member was not associated with the smoking status of the adolescent. Adolescents from a family with both parents and from a family with a single parent showed no difference in their smoking prevalence rates.

Smokeless Tobacco

Table 2 presents use of smokeless tobacco products by levels of sociodemographic variables. As with cigarette smoking, the same six out of eight sociodemographic factors turned out to be significant. Regular smokeless tobacco use for the 15 to 16 age group (3.1 percent) and the 17 to 18 age groups (5.7 percent) was substantially higher than the 12 to 14 age group (0.6 percent). It is also noted that the overwhelming majority of regular smokeless tobacco users were males. Among ethnic groups, white adolescents had the highest prevalence (3.2 percent), followed by Hispanic adolescents (1.0 percent). Black adolescents reported the lowest regular use rate (0.3 percent). Adolescents from above poverty level families had a higher regular smokeless tobacco use rate than those adolescents from below poverty level families (2.5 percent vs. 1.6 percent). Geographically, adolescents from non-MSA had the higher regular use (3.8 percent), followed by adolescents from non central cities (2.4 percent) and central cities (1.1 percent). As for region, adolescents from the south had the highest rate (3. 1 percent), followed by adolescents from the midwest (2.3 percent).

The west and northeast bad the lowest rate at 1.8 percent. The education of the responsible adult family member was not associated with the smokeless tobacco use of adolescents. And adolescents from a family with both parents and from a single parent family showed no difference in their smokeless tobacco use.

Conclusion

The public health movement against tobacco use will not be successful if young people do not stop smoking. One of the nation's health objectives for the year 2000 is to reduce the initiation of smoking to no more than 15 percent by age 20 (U.S. Department of Health and Human Services, 1990). This article showed that close to 30 percent of adolescents in school, aged from 12 to I 8, had initiated smoking. Further, the experimental and regular smoking prevalence rate sharply increased with 15 to 16 year old adolescents (42.2 percent) and reached over 50 percent with 17 to 18 year old adolescents. These statistics suggest that health professionals are a long way from achieving this specific nation's health goal for the year 2000. And while there is no specific health goal for reducing smokeless tobacco use among our nation's youth, this article found that 12.6 percent of school-based adolescents had either tried or currently were using smokeless tobacco products. And most alarmingly was the fact the vast majority (71.5 percent) of smokeless tobacco users were also regular smokers or experimental smokers.

With this in mind, this article highlights the need to provide comprehensive tobacco use prevention programs that focus on both cigarette and smokeless tobacco use among adolescents. Unfortunately, most school health instructional programs neglect smokeless tobacco use (U.S. Department of Health and Human Services, 1993). In fact, most states even neglect to mandate tobacco prevention education instruction within the comprehensive school health education program (U.S. Department of Health and Human Services, 1993). Further, the average time mandated for school health instruction decreases with each grade, parallel to when tobacco use increases (U.S. Department of Health and Human Services, L993).

Table 1. Sociodemographic Risk Profile of Cigarette Smoking In National Adolescents

	Nonsmoker %(n)	Experimenter %(n)	Regular Smoke %(n)
Age*			
12-14	85.8(3953)	11.8(541)	2.4(111)
15-16	57.8(1223)	26.9(569)	15.3(323)
17-18	49.6(923)	30.7(572)	20.0(366)
Gender*			
Male	69.8(3096)	20.9(929)	9.3(412)
Female	72.5(3003)	18.2(753)	9.4(388)
Ethnicity*			
White	67.9(3909)	20.6(1183)	11.6(665)
Black	80.1(1289)	16.7(268)	3.3(53)
Hispanic	73.1(632)	19.7(170)	7.3(63)
Other	77.1(269)	17.5(61)	5.4(19)
Poverty*			
Above Poverty	70.2(4750)	19.8(1338)	10.0(678)
Below Poverty	74.1(949)	19.6(251)	6.3(81)
Education			
<12 years	70.4(710)	20.9(211)	8.7(88)
=12 years	69.8(2131)	20.6(629)	9.6(293)
>12 years	72.0(3221)	18.7(838)	9.3(417)
Parents			
Both	71.1(4628)	19.4(1264)	9.5(621)
Single	70.3(1316)	20.6(386)	9.0(169)
Urban area*			
Central city	73.0(1829)	19.3(483)	7.7(193)
Non-central	70.8(2771)	19.0(744)	10.2(400)
Non MSA	69.4(1499)	21.1(455)	9.6(207)
Region*			
Northeast	69.5(1120)	19.4(312)	11.1(179)
Midwest	70.0(1581)	18.8(424)	11.2(254)
South	71.8(2076)	20.8(600)	7.4(215)
West	72.6(1322)	19.0(346)	8.4(152)

*Significant at $p<0.01$ from chi-square test.
Note: Totals may not add to 8,725 because of missing values.

In addition, findings from this article identify a sociodemographic risk profile of smoking adolescents which tobacco prevention interventions should target. For example, factors associated with higher smoking prevalence include adolescents who are white and come from families above the poverty level, who live in non-central cities or non-MSA areas, especially those areas in the northeast and midwest. Surprisingly, lower educational levels of the responsible family member did not increase the risk of adolescent smoking, nor did living in a single parent household. These results are not consistent with previous studies identifying these risk factors (U.S. Department of Health and Human Services, 1990).

The sociodemographic risk profiles of adolescent smokeless tobacco users was very similar to that of cigarette smoking. In fact, the same sociodemographic factors that were found significant for cigarette smoking turned out to be significant for smokeless tobacco use. This lends support to the notion that tobacco use prevention programs targeting both smoking and smokeless tobacco could be successful by targeting the same adolescent groups. Two major exceptions, however, are noticed. While no substantial difference existed between male and female smokers, smokeless tobacco use was largely limited to male adolescents (see Table 2). Also, adolescents from the south had the lowest smoking prevalence but had the highest prevalence of smokeless tobacco.

In conclusion, this article demonstrates that similar sociodemographic risk profiles exist for school-based adolescents who smoke cigarettes and who use smokeless tobacco, and that adolescents who have used smokeless tobacco products are likely also to have smoked. Thus, it is apparent that school health instruction at all grade levels should provide tobacco use prevention interventions with emphasis on both cigarette smoking and smokeless tobacco use.

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Table 2. Sociodemographic Risk Profile of Smokeless Tobacco Use In National Adolescents

	Non User %(n)	User Non Regular %(n)	User Regular %(n)
Age*			
12-14	94.2(3453)	5.2(239)	0.6(28)
15-16	82.7(1718)	14.3(308)	3.1(66)
17-18	76.0(1481)	18.3(357)	5.7(112)
Gender*			
Male	79.7(3611)	15.9(720)	4.4(199)
Female	95.5(4004)	4.4(184)	0.2(7)
Ethnicity*			
White	83.7(4928)	13.0(767)	3.2(190)
Black	96.2(1555)	3.5(56)	0.3(5)
Hispanic	92.2(807)	6.7(59)	1.0(9)
Other	93.1(325)	6.5(22)	0.6(2)
Poverty*			
Above Poverty	86.4(5947)	11.0(759)	2.5(175)
Below Poverty	90.9(1181)	7.5(98)	1.6(21)
Education			
<12 years	87.9(897)	9.5(97)	2.6(27)
=12 years	87.2(2721)	10.2(318)	2.6(82)
>12 years	87.1(3954)	10.8(488)	2.1(96)
Parents			
Both	86.6(5737)	10.8(716)	2.6(170)
Single	88.9(1689)	9.3(177)	1.8(34)
Urban area*			
Central city	93.0(2363)	5.9(151)	1.1(27)
Non-central	87.2(3460)	10.4(414)	2.4(95)
Non MSA	80.9(1792)	15.3(339)	3.8(84)
Region*			
Northeast	90.5(1486)	7.7(127)	1.8(29)
Midwest	86.3(1982)	11.5(264)	2.3(52)
South	86.2(2532)	10.7(314)	3.1(91)
West	87.4(1615)	10.8(199)	1.8(34)

*Significant at $p<0.01$ from chi-square test.
Note: Totals may not add to 8,725 because of missing values.