
Using the Behavioral Risk Factor Surveillance System To Monitor Year 2000 Objectives Among American Indians

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Synopsis

The Behavioral Risk Factor Surveillance System, a data set based on telephone surveys that have been conducted by States in collaboration with the Centers for Disease Control, has been used to estimate the prevalence of behavioral risk factors for adults in the United States so health objectives can be set and progress towards accomplishing them measured. Data for adult American Indians in this regard have not been available generally.

The use of these data to estimate behavioral risk prevalence for American Indians by geographic region was examined and the results compared with those for white Americans. In addition, data from the system were compared with other data sets, including the results of selected surveys in American Indian communities, to explore the validity of the system as a tool for evaluating the behavioral risks of Indians.

Behavioral Risk Factor Surveillance System data for the period 1985 to 1988 were used. During this period, the 1,055 American Indian respondents constituted 0.63 percent of those responding under

the system and 0.70 percent of the population of the participating States.

Separate (sex-specific) behavioral risk prevalence estimates were derived for Indians and whites for four geographic regions—Southwest, Plains, West Coast, and Other States. The system's behavioral risk estimates for the Plains region were compared with available data from behavioral risk surveys done in three American Indian communities in Montana (Blackfeet, Fort Peck, and Great Falls) from 1987 to 1989. The behavioral risk factors compared include use of automobile seatbelts, current smoking, current use of smokeless tobacco, heavy drinking, drinking and driving, overweight, hypertension, and sedentary lifestyle.

Although large regional differences in the prevalence of these risk factors were found, the magnitude and direction of the differences are frequently similar among American Indians and whites living in the same geographic regions. The findings from the Behavioral Risk Factor Surveillance System among American Indians are largely consistent with independently collected data from more resource-intensive household surveys, at least when surveys in Montana are compared with system data from the Plains. These data are generally consistent with other epidemiologic studies.

When they are used in conjunction with community-specific surveys, the Behavioral Risk Factor Surveillance System data may be useful for monitoring the progress of American Indians towards the Year 2000 national health objectives. The value of the surveillance system for monitoring trends in behavioral risk factors among Indians would be enhanced if States attempted to oversample regions (such as Indian reservations) with a high proportion of Indian residents. It appears that aggressive health promotion and disease prevention efforts will be needed if these objectives are to be achieved.

THE HEALTH PROBLEMS of American Indians are related primarily to behavioral risks (1,2). These diseases and injuries have infectious and noninfec-

tious causes and are both acute and chronic. The National Health Objectives for the Year 2000, as well as the objectives of the Indian Health Service

States Participating in the Behavioral Risk Factor Surveillance System, (BRFSS) 1985-88, by Geographic Region and Indian Health Service (IHS) Area

Southwest—Arizona, New Mexico, Utah. IHS Areas: Albuquerque, Navajo, Tucson, Phoenix

Plains—Iowa (1988), Minnesota, Montana, Nebraska (1987), North Dakota, South Dakota, Wisconsin. IHS Areas: Aberdeen, Bemidji, Billings

West Coast—California, Idaho, Washington (1987). IHS Areas: Portland, California

All other—Alabama (1986), Connecticut (1985, 1988), Florida, Georgia, Hawaii (1986), Illinois, Indiana, Kentucky, Maine (1987), Maryland (1987), Massachusetts (1986), Michigan (1987), Missouri (1986), New Hampshire (1987), New York, North Carolina, Ohio, Oklahoma (1988), Rhode Island, South Carolina, Tennessee, Texas (1987), West Virginia. IHS Areas: Nashville, Oklahoma

NOTE: Connecticut participated in 1985 and 1988 only. For other States that did not participate in all of the 1985-88 period, their first year of participation is in parentheses.

(IHS), establish priorities for reducing many of these behavioral risks (3). Although the prevalence of selected behavioral risk factors has been established for a few Indian communities, very little baseline behavioral risk information exists on American Indians nationwide, so efforts to develop program plans and establish national public health initiatives have been hampered.

The Behavioral Risk Factor Surveillance System (BRFSS) is a data set based on telephone surveys that have been conducted by States in collaboration with the Centers for Disease Control (CDC) of the Public Health Service. The BRFSS has been used to provide information about regional and, to some extent, racial differences in the prevalence of various behavioral risks, but it has not been evaluated for its ability to provide national and regional estimates of these risks among American Indians.

In this report, we examine the responses of persons identifying themselves as Indians in the BRFSS to provide a profile of selected behavioral risk factors for men and women by geographic region. We compare these profiles to those of white men and women residing in the same geographic regions. In order to evaluate the validity of the

BRFSS as a tool to describe accurately behavioral risks among Indians, we compare data obtained through the BRFSS with data from household surveys in selected Indian communities and with other existing data.

Background and Method

CDC has maintained the BRFSS since 1984 in collaboration with State health departments. With the use of a multistage cluster-design procedure, based on the Waksberg method of random-digit dialing, adult respondents ages 18 and older have been randomly selected from among noninstitutionalized civilian residents in homes with telephones in participating States (4). Respondents in a total of 36 States participated in 1988 (5). Our study combines data from 1985 through 1988, years when respondents in at least half of the 50 States participated in the BRFSS. In each State, a core set of behavior risk questions is asked, including inquiries about seatbelt use; use of tobacco and alcohol; weight and height; history of hypertension; and regularity of exercise.

American Indians constituted approximately 0.70 percent of the population of the 36 participating States during the period of this study—1.36 million out of 193.05 million in 1986 (6,7). During this period, 166,145 interviews were completed in the BRFSS States; 1,055 (0.63 percent) of the respondents who participated in these identified themselves as American Indians. Alaska did not participate in the BRFSS from 1985 to 1988, but an unknown number of Alaska Natives residing in participating States also may be included among Indian respondents.

To assess regional variation in behavioral risk prevalence for American Indians, we divided the BRFSS data by geographic region (see box on this page). Regional boundaries were selected to correspond to aggregations of 11 geographic regions defined as administrative areas by IHS (1). The 12th IHS area (Alaska) is not included in these data, because Alaska did not participate in the BRFSS during the years under study. The behavioral risk factor topics selected for comparison in this study, and the at-risk responses to these questions are shown in the box on page 453.

From 1987 to 1989, IHS, in collaboration with CDC and selected tribes in Montana, conducted behavioral risk factor surveys using many of the same questions included in the BRFSS (table 1) (8,9). These surveys were conducted by trained Indian personnel who interviewed adult respon-

Table 1. American Indian Health Risk Assessment Studies conducted by Tribes or Tribal Organizations in Montana in collaboration with the Indian Health Service and the Centers for Disease Control, 1987-89

Locations and tribes	Implementing organization	Respondent age (years)	Completion rate		Fieldwork date
			Women	Men	
Blackfeet Reservation: Blackfeet	Blackfeet Tribal Health	15-49	81.1	71.1	October-December 1987
Great Falls: Chippewa-Cree, Little Shell Blackfeet, and Chippewa	Native American Center	15-49	73.0	61.6	October-December 1987
Fort Peck Reservation: Assiniboine and Sioux ...	Fort Peck Tribal Health	15+	57.3	61.4	May-July 1989

dents in person. The Montana surveys included persons ages 15-49 (Blackfeet and Great Falls) or ages 15 or older (Fort Peck), while the BRFSS respondents were ages 18 or older (table 1). We compared the results from the IHS-CDC surveys in Montana with those from the BRFSS in northern plains States. Unless otherwise noted, the data have been age adjusted by the direct method using the combined age distribution of American Indians and whites as the reference.

Results

Of the 1,055 American Indian respondents to the national BRFSS, 345 (32.7 percent) were from the Plains States, 220 (20.8 percent) from the Southwest States, 153 (14.5 percent) from West Coast States, and 337 (31.9 percent) from other States. Of the respondents, 607 (57.5 percent) were female; the female proportion of respondents did not differ substantially by geographic area. The median age of Indian respondents was similar among the four regions (range 34.5-38.5 years for men; 33.0-41.0 for women).

The overall prevalences of eight behavioral risks from the BRFSS for both American Indians and whites are shown in the chart. The sex-specific behavioral risk prevalences for Indians compared with whites do not differ by more than 4.0 percentage points, except for current smoking by both men and women (Indian rates are higher), and overweight among women (Indian rate is higher).

In previous reports of BRFSS data, wide variations in the prevalence of behavioral risk factors (as much as 10-fold, for example, for seatbelt nonuse) among various States have been reported (5). As expected, we found regional variations in the prevalence of these risk factors among American Indians. The variations are illustrated subsequently in this paper. It is notable, however, that, in most cases, regional differences among Indians

were similar in magnitude to the regional differences among whites (tables 2 and 3).

Seatbelt nonuse. The prevalence of seatbelt nonuse (sometimes, seldom, or never used) reported by Indians and whites varied widely by geographic region. For Indians, the prevalence ranged from 24.5 percent in West Coast States to 64.4 percent in Plains States for men and from 17.9 percent in West Coast States to 72.7 percent in Plains States for women (tables 2,3). For white men and women, the geographic region differences were similar to those of Indians. The highest nonuse of seatbelts is in the Plains States for all groups. The prevalence of seatbelt nonuse reported by American Indians in the IHS-CDC surveys in Montana (table 4) was very similar to the prevalence reported for Indians in the BRFSS for the Plains States (tables 2,3).

Cigarette smoking. The prevalence of current cigarette smoking varied more than twofold for American Indian men and more than fourfold for Indian women by geographic region. In Southwest States, only 18.1 percent of Indian men and 14.7 percent of Indian women reported current smoking, while in the Plains States, 48.4 percent of Indian men and 57.3 percent of Indian women reported current smoking (tables 2,3). Cigarette smoking is one factor in which regional differences among Indians were markedly different from those among whites, as the prevalence of current smoking reported by white respondents varied relatively little by geographic region (tables 2,3). Like the Indian respondents in the BRFSS from the northern plains region, men and women in the IHS-CDC surveys reported very high rates of current smoking (table 4).

Smokeless tobacco use. As with current smoking, current use of smokeless tobacco was much higher for American Indian men in the Plains States than in any other region. Also, Indian men reported a

Table 2. Number responding and percent with behavioral risk factor as reported by American Indian men and white men in the geographic region

Risk factor	American Indians							
	Southwest		Plains		West		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Seatbelt nonuse.....	93	44.7	152	64.4	59	24.5	144	38.1
Drinking ¹	93	20.5	152	31.8	59	20.5	144	30.4
Drinking and driving.....	93	5.3	152	6.8	59	9.7	144	10.5
High blood pressure.....	93	24.4	152	15.4	59	18.0	144	23.6
Sedentary lifestyle.....	93	58.5	152	44.2	59	59.3	137	58.1
Smoking.....	93	18.1	152	48.4	59	25.2	144	38.0
Smokeless tobacco.....	54	9.3	92	14.5	46	1.9	92	3.8
Overweight.....	54	30.0	92	27.8	46	22.7	92	24.0

¹ 5 or more drinks on at least 1 occasion in preceding 4 weeks.

Table 3. Number responding and percent with behavioral risk factor as reported by American Indian women and white women in the geographic region

Risk factor	American Indians							
	Southwest		Plains		West		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Seatbelt nonuse.....	127	36.5	193	72.7	94	17.9	193	27.5
Drinking ¹	127	2.6	193	27.0	94	11.3	193	9.1
Drinking and driving.....	127	0.0	193	4.4	94	3.8	193	2.8
High blood pressure.....	127	25.2	193	16.2	94	21.0	193	19.6
Sedentary lifestyle.....	127	55.3	193	59.0	94	39.2	186	65.7
Smoking.....	127	14.7	193	57.3	94	31.6	193	30.7
Smokeless tobacco.....	78	0.0	136	0.5	66	0.7	128	2.1
Overweight.....	78	28.5	136	35.7	66	26.8	128	23.9

¹ 5 or more drinks on at least 1 occasion in preceding 4 weeks.

higher prevalence of smokeless tobacco use than did Indian women. Indian men had similar levels of smokeless tobacco use to white men in each region except the Plains, where Indian use was nearly twice that of whites. Indian and white women had similar, low levels of use in all regions. Again, the results of IHS-CDC surveys and the BRFSS for Indians in the northern plains were largely congruent. In the northern plains States, 14.5 percent of Indian men reported using smokeless tobacco (table 2), which is similar to the 19.2 percent identified in the Montana surveys (table 4).

Heavy drinking. American Indian men reported a much higher prevalence of heavy drinking (5 or more drinks on at least one occasion during the preceding 4-week period) than did Indian women, with the exception of women in Plains States. Reported heavy drinking was similar among Indian men and white men. Twenty-seven percent of Indian men (range: 20.5 percent in West Coast and other States to 35.1 percent in Plains States) and 25.7 percent of white men (range: 22.2 percent in

Southwest States to 34.0 percent in Plains States) reported heavy drinking (chart, page 455, table 2). While only 9.3 percent of white women (range: 6.7 percent in Southwest States to 13.6 percent in Plains States) and 10.5 percent of Indian women (range: 2.6 percent in Southwest States to 27.0 percent in Plains States) reported heavy drinking, the reported prevalence in Indian women in the Plains States was similar to that for both Indian men and white men in all regions (chart, table 3).

In the Montana surveys, the definition of acute heavy drinking included having had a drink in the past month and, when drinking, usually drinking enough to "be drunk" or "not remember, black out." The heavy drinking prevalence reported by Indian men in the IHS-CDC surveys in Montana (32.5 percent) (table 4) is similar to the prevalence for the Plains from the BRFSS (31.8 percent) (table 2). On the other hand, the heavy drinking prevalence reported by Indian women in the IHS-CDC surveys (17.1 percent) (table 4) was lower than the 27.0 percent prevalence for Plains Indian women in the BRFSS (table 3).

Whites							
Southwest		Plains		West		Other	
Number	Percent	Number	Percent	Number	Percent	Number	Percent
4,699	43.0	13,496	52.6	5,312	27.3	34,903	41.1
4,699	22.0	13,496	34.0	5,312	25.2	34,903	25.0
4,699	5.8	13,496	10.8	5,312	7.6	34,903	7.2
4,699	19.6	13,496	20.3	5,312	21.7	34,903	20.5
4,699	51.5	13,496	56.6	5,312	49.9	34,444	58.7
4,699	23.6	13,496	25.0	5,312	23.9	34,903	28.6
2,680	6.0	8,595	7.4	3,570	3.4	22,890	6.4
2,680	16.5	8,595	22.7	3,570	21.2	22,890	22.1

the Behavioral Risk Factor Surveillance System, 1985-88, by

Whites							
Southwest		Plains		West		Other	
Number	Percent	Number	Percent	Number	Percent	Number	Percent
6,362	35.7	17,422	43.0	7,759	21.5	49,421	33.0
6,362	6.7	17,422	13.6	7,759	10.2	49,421	8.8
6,362	1.9	17,422	2.8	7,759	2.3	49,421	2.1
6,362	20.5	17,422	20.8	7,759	21.9	49,421	21.8
6,362	50.2	17,422	53.1	7,759	49.4	48,780	59.9
6,362	22.0	17,422	23.0	7,759	23.1	49,421	26.1
3,490	0.3	11,015	0.1	5,121	0.1	32,224	0.4
3,490	15.6	11,015	19.8	5,121	16.1	32,224	17.7

Drinking and driving. As was the case with heavy drinking, American Indian men reported more drinking and driving than did Indian women (tables 2,3). For women, the reported drinking and driving prevalence was highest in the Plains States (4.4 percent), while for Indian men the prevalence was highest in West Coast States (9.7 percent) and Other States (10.5 percent) (tables 2,3). Higher drinking and driving prevalences were reported for Indians in the Montana IHS-CDC surveys (19.2 percent for men and 8.1 percent for women) (table 4) than in the Plains for Indians who participated in the BRFSS (6.8 percent for men and 4.4 percent for women) (tables 2,3).

Overweight. The highest prevalence of overweight for American Indians was reported from the Southwest for men and the Plains for women (tables 2,3). The prevalence of overweight for Indian women and men exceeded that for white women and men in each region. Indian men (31.1 percent) and women (40.7 percent) in the Montana IHS-CDC surveys reported a prevalence of overweight

Selected Behavioral Risk Topics in Behavioral Risk Factor Surveillance System Surveys and the Responses that are Considered at Risk

Seatbelt: Persons reporting "sometimes," "seldom," or "never" use of a seatbelt.

Current smoking: Person answers positively to the question, "Do you smoke now?"

Current use of smokeless tobacco: Person answers positively to the question, "Do you use chewing tobacco or snuff now?"

Heavy drinking: Person who has had 5 or more drinks on an occasion, one or more times in past month.

Drinking and driving: Person who reports that they have driven after having had perhaps too much to drink.

Overweight: A body mass index of at least 27.8 for men and at least 27.3 for women (weight in kilograms divided by height in meters squared).

Hypertension: Persons who have been told more than once that they have high blood pressure.

Sedentary lifestyle: Person who has less than three 20-minute sessions of leisure-time physical activity per week.

slightly higher than Indian men ((27.8 percent) and women (35.7 percent) in the BRFSS in the Plains (table 4).

Hypertension. The overall prevalence of hypertension (person has been told more than once that they have high blood pressure) for American Indian men and women was essentially the same as that for white men and women (chart). The prevalences of hypertension for Indian men in the IHS-CDC surveys (table 4) were lower than for those in the Plains BRFSS samples (table 2). The hypertension prevalence estimates for women from IHS-CDC surveys (table 4) was 15.3 percent, similar to the 16.2 percent prevalence estimate for Indian women in the Plains national BRFSS (table 3).

Sedentary lifestyle. Like white men and women, the majority of American Indian men and women re-

Table 4. Behavioral risks reported by American Indian men and women in selected Montana communities, 1987-89

Risk factor	Percent with risk factor	
	Men ¹	Women ²
Seatbelt nonuse.....	73.1	67.9
Drinking ³	32.5	17.1
Drinking and driving.....	19.2	8.1
High blood pressure.....	11.7	15.3
Sedentary lifestyle.....	37.9	48.6
Current smoking.....	50.7	54.5
Current use of smokeless tobacco..	19.2	1.5
Overweight.....	31.1	40.7

¹ Number of men responding, by community, was Blackfeet, 125; Great Falls, 106; and Fort Peck, 181; total 412.

² Number of women responding, by community, was Blackfeet, 116; Great Falls, 116; and Fort Peck, 161; total, 393.

³ Person had a drink in the past month and, when drinking, usually drank enough to "be drunk" or "not remember, black out."

'The utility of the BRFSS for monitoring trends in behavioral risk factors among Indians would be enhanced if States attempted to oversample regions (such as Indian reservations) with a high proportion of Indian residents.'

ported a sedentary lifestyle (less than three 20-minute sessions of leisure-time physical activity per week) (chart). Less sedentary lifestyle was reported by Indian men in the Plains States and Indian women in the West Coast States (tables 2,3). The prevalence of sedentary lifestyle reported by both men (37.9 percent) and women (48.6 percent) in the IHS-CDC surveys (table 4) was lower than the 44.2 percent for men and 59.0 percent for women in the BRFSS.

Age differences. When BRFSS respondents were stratified by age (younger than age 50, or age 50 and older), differences in the prevalence of risk factors among younger American Indians compared with older Indians were similar to those seen in whites. For instance, while 14.7 percent of Indian men and 13.3 percent of white men younger than age 50 reported a history of hypertension, the corresponding proportions were 32.9 percent for Indians and 34.3 percent for whites age 50 or older. However, while the prevalence of acute drinking reported by younger Indian men (33.5 percent) and white men (33.4 percent) was almost identical, the reported acute drinking prevalence

was slightly higher among older Indian men (18.4 percent) compared with white men (11.2 percent). On the other hand, the reported acute drinking prevalence for younger Indian women (14.8 percent) and older Indian women (2.4 percent) was virtually the same as that reported by younger white women (12.9 percent) and older white women (2.4 percent). Thus, the BRFSS data can provide some insight into age differences in behavioral risk factors among American Indians, although the relatively low numbers of Indians older than age 50 in some regions precluded meaningful comparison among geographic regions.

Discussion

BRFSS data collected during 1985-88 provide baseline estimates for several Year 2000 risk reduction health objectives. The number of respondents included in these surveys is sufficient to allow study of the prevalence of various behavioral risk factors among American Indians. Because marked regional variations in these estimates occur for Indians, just as they do for other races, region-specific prevalence measures will be needed to monitor progress towards achievement of the Year 2000 health objectives.

There are several notable features of these data. First, although there are large regional differences in the prevalence of these risks factors, the magnitude and direction of the differences is frequently similar among American Indians and whites living in the same geographic regions. Second, the findings from the BRFSS among Indians are largely consistent with independently collected data from more resource-intensive household surveys, at least when surveys in Montana are compared with northern plains BRFSS data. Finally, the BRFSS data regarding some behavioral risk factors among Indians are generally consistent with other national epidemiologic studies. For instance, the high rates of tobacco use among Indian adults reported in the BRFSS are congruent with high rates of tobacco use reported by Indian high school seniors in recent national surveys (10).

The greater prevalence of overweight reported among American Indians than among the general United States population (11) is reflected in the BRFSS as well. On the other hand, the self-reported prevalence of hypertension among Indians in the BRFSS is approximately twice that estimated in a recent report of hypertension prevalence in American Indians (12). That report is based on data from IHS ambulatory patient care encounters.

Although it is not currently possible to determine which estimate most closely reflects the true prevalence of hypertension among Indians, the BRFSS data raise the possibility that a substantial proportion of Indians with known hypertension are not receiving regular medical treatment for high blood pressure. Alternatively, persons who respond yes to the BRFSS questionnaire may not actually have hypertension requiring treatment.

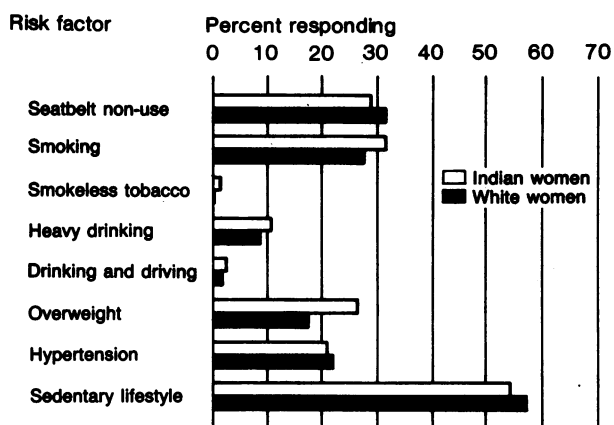
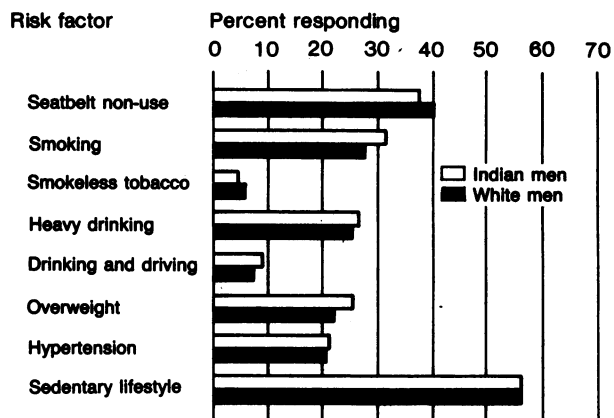
There are several limitations that should be recognized when interpreting the BRFSS data. First, IHS-CDC surveys have found low telephone coverage among American Indians in Montana (less than half the Indian households have telephones). Low telephone coverage also characterizes other Indian communities; approximately half the households on the 25,000-square-mile Navajo reservation (the largest in the country) have telephones. On the other hand, a recent IHS-CDC survey in New York found more than 80 percent of the American Indian households in the survey had telephones (13). Consequently, in certain geographic areas (most notably the Plains and parts of the Southwest) the BRFSS results may be biased if American Indians with telephones behave differently than those without telephones. In the IHS-CDC surveys completed to date, differences between persons with and without telephones for most of the behavioral risk factors have been minor.

Second, the relatively small sample size of American Indians for any single year of the BRFSS will probably prohibit annual sex-specific geographic region comparisons. In the future, however, for monitoring trends over time for some behavioral risk factors, a 3- to 5-year aggregation of the data may be useful.

Third, for certain risk factors (such as hypertension and overweight) self-reported levels rather than actual objective measurements may yield biased results. No studies to date have been done by IHS-CDC to validate the self-reported data in these surveys.

How do data presented in this report compare to corresponding Year 2000 risk reduction health objectives? The following examples will illustrate how BRFSS data can be used to provide perspective on measures of American Indian health status. One national objective is to have at least 85 percent of motor vehicle occupants using state-of-the-art occupant protection systems, such as seatbelts, by the Year 2000 (3). To achieve this objective, American Indians will need to decrease seatbelt nonuse from the current 38.0 percent for men and 28.8 percent for women to less than 15 percent, or use motor

Behavioral risks reported by American Indian men and white men (top panel) and American Indian women and white women (bottom panel) in the Behavioral Risk Factor Surveillance System, 1985-88



vehicles with other state-of-the-art protection systems, or both. It is likely that this objective will be more readily achieved in the West Coast region, where seatbelt nonuse for Indians is now reported to be 24.5 percent for men and 17.5 percent for women, than in the Plains region, where current seatbelt nonuse is 64.4 percent for men and 72.7 percent for women. Passage and enforcement of safety belt use laws, a Year 2000 health objective, should be encouraged in Indian communities, particularly in the Plains region.

National objectives for reduction in tobacco use are also very important for American Indians. The overall national objective for reduction of cigarette smoking risk for U.S. adults is to have a prevalence of no more than 15 percent by the Year 2000 (3). The specific objective for American Indian adults is to have no more than 20 percent current smoking prevalence by the new century. While Indians in the Southwest region may have achieved the latter objective already, Indians in other regions

of the United State have very high current smoking rates (tables 2,3).

Smoking cessation efforts among American Indians must be expanded soon if the Year 2000 health objectives are to be achieved. Similarly, efforts to prevent use of smokeless tobacco must be enhanced. The national objective for reduction of Indians' risk is to have less than 10 percent current smokeless tobacco use by any subgroup of Indians by the Year 2000. While it appears that this objective has already been achieved in most Indian groups, in many communities, especially in the Plains region, substantial use reduction will be necessary in order to achieve the objective (tables 3,4).

When used in conjunction with community specific surveys, the BRFSS data may be more useful than previously thought for monitoring American Indian progress towards the Year 2000 national health objectives. The utility of the BRFSS for monitoring trends in behavioral risk factors among Indians would be enhanced if States attempted to oversample regions (such as Indian reservations) with a high proportion of Indian residents. It appears that aggressive health promotion and disease prevention efforts will be needed if these objectives are to be achieved.

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