

DOCUMENT RESUME

ED 296 117

CE 050 399

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TITLE Worksite Wellness Media Report Research Update 1988. Worksite Wellness Series.
INSTITUTION Washington Business Group on Health, Washington, DC.
SPONS AGENCY Public Health Service (DHHS), Rockville, MD. Office of Disease Prevention and Health Promotion.
PUB DATE Feb 88
NOTE 36p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Attitude Change; Behavior Modification; Case Studies; *Corporate Education; Drug Abuse; Drug Education; *Health Education; *Health Programs; Mental Health; Nutrition Instruction; Obesity; *Physical Health; *Program Content; Program Descriptions; Program Effectiveness; *Safety Education; Scientific Research; Smoking; Stress Management; Traffic Safety; Trend Analysis; Work Environment

ABSTRACT

This report is the 15th in a series of updates on worksite health promotion activities in the United States. The first section summarizes the results of three recent surveys: a study of the extent of worksite wellness activities in the United States (funded by the Office of Disease Prevention and Health Promotion); a 1986 Harris poll of Americans on their life-styles; and a 1986 telephone survey that compared self-reported health behaviors in 25 states and the District of Columbia. The second section discusses the results of evaluation studies of four major comprehensive health promotion programs offered by the following firms: Control Data Corporation, AT&T Communications, Johnson & Johnson, and Blue Cross and Blue Shield of Indiana. The third section reports selected research findings that have been published since the last in this series of updates. The following are among the research findings discussed: smokers who quit decrease their risk of stroke by more than half; smoking increases motor vehicle accidents and traffic violations; smoking costs the United States \$53.7 billion in medical and salary costs yearly; age, income, education, and life-style can predict stress levels; significant increases in safety belt use have occurred; child safety belts and rear seat lap belts have proven effective; and obesity may result from lack of activity rather than from overeating. (MN)

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WORKSITE WELLNESS SERIES

**WORKSITE WELLNESS
MEDIA REPORT
RESEARCH UPDATE 1988**

Prepared by

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and

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Prevention Leadership Forum

**A Cooperative Effort
of the**

**Washington Business Group on Health
Washington, D.C.**

and

**Office of Disease Prevention and Health Promotion
Public Health Service
U.S. Department of Health and Human Services**

Worksite Wellness Series

WORKSITE WELLNESS MEDIA REPORT

RESEARCH UPDATE 1987

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February, 1988

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WORKSITE WELLNESS MEDIA REPORT

RESEARCH UPDATE 1987

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INTRODUCTION

From September, 1985 through May, 1987, a series of 14 Worksite Wellness Media Reports were issued in an effort to provide to the media accurate, up-to-date information on employers' efforts to help their employees stay well. This 15th report is an update on the research and evaluation sections contained in those earlier papers.

Much of the information contained herein was not available at the time the original documents were produced. Because the previous papers focused on specific health promotion interventions (physical fitness, stress management) or audiences (programs for older workers and retirees, union programs), they did not include information about comprehensive programs--that is research and evaluation studies that looked at a company's total efforts rather than at one component. Therefore, the results of four recent studies of comprehensive programs also are reported.

Some of the studies and surveys report somewhat differing findings, often a result of different methodologies, audiences, or time frames. However, as a whole, the findings are remarkably similar and offer strong support for the value of these programs, both to the employers and to the employees.

This "Worksite Wellness Media Report Research Update 1987" covers:

- o Surveys,
- o Comprehensive Programs, and
- o Research Updates.

In addition to the authors, the following individuals contributed material for use in this background paper: Michael Eriksen, Sc.D., M.D. Anderson Hospital and Tumor Institute; Dennis T.

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SURVEYS

Three recent surveys shed new light on Americans' health habits and on the popularity of worksite health promotion activities.

WELLNESS ACTIVITIES FOUND IN MAJORITY OF WORKSITES: U.S. SURVEY

Worksite wellness activities, once thought of as fads or frivolous employee benefits, are now found in almost two-thirds of the nation's worksites with 50 or more employees, according to a recent national survey. However, large worksites are much more likely than small ones to have wellness activities.

Nearly 66 percent (65.8) of the nation's worksites with 50 or more workers had at least one health promotion activity, according to the National Survey of Worksite Health Promotion Activities.⁽¹⁾ Among the "activities" identified in the survey were health promotion-related policies, information dissemination, classes or workshops, individual counseling, self-help materials, screenings, treatment, referral, and special events.

Funded by the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, the survey covered nine wellness topics, and found that from 15 to 36 percent of all worksites had activities related to each topic.

- o smoking control (35.6 percent of worksites),
- o health risk appraisals (29.5 percent),
- o back care (28.6 percent),
- o stress management (26.6 percent),
- o exercise/physical fitness (22.1 percent),
- o off-the-job accident prevention (19.8 percent),

- o nutrition education (16.8 percent),
- o high blood pressure control (16.5 percent) and
- o weight control (14.7 percent).

However, when the much narrower category of "classes or lectures" was looked at, the order of popularity changed dramatically, as did the number of worksites with these more formal programs. The top-ranking topics for which worksites offered classes or lectures were:

- o back care (found in 15.9 percent of worksites),
- o stress management (15.6 percent),
- o exercise/physical fitness (13.1 percent), and
- o weight control (7.6 percent).

The prevalence of activities varied significantly by size of the worksite, with those of more than 750 employees most frequently reporting activities and smaller ones (less than 100 employees) the least likely to do so.

Benefits of Worksite Wellness Activities

Improved employee health was identified as the most important benefit for six of the program topics--nutrition, high blood pressure control, physical fitness, weight control, health risk appraisals, and smoking. Improved productivity was the most important benefit of stress management activities; and reduction in costs was identified as the top-ranking benefit for both back care activities and off-the-job accident prevention. The Table on the following page shows responses for all nine topic areas.

Copies of the National Survey of Worksite Health Promotion Activities are available from the ODPHP Health Information Center, P.O. Box 1133, Washington, DC 20013-1133.

<u>Topic</u>	<u>Benefits Reported</u>				
	Improved Employee Health	Reduced Costs	Increased Productivity	Improved Morale	None
Nutrition	59.6%	5.8%	25.5%	20.7%	7.2
High Blood Pressure Control	57.5	13.6	31.8	15.0	0.9
Physical Fitness	53.5	4.7	26.0	37.4	8.6
Weight Control	53.2	6.4	29.6	34.4	12.0
Health Risk Appraisal	47.1	14.3	24.2	14.2	8.3
Smoking Control	40.9	7.9	16.4	9.0	10.2
Stress Management	20.2	4.2	46.5	30.0	7.8
Back Care	26.3	40.7	24.3	---	3.2
Off-the-job Accident prevention	19.8	24.9	23.3	---	4.6

AMERICANS' HEALTH HABITS ON HOLD: HARRIS POLL

Were Americans living healthier lives in 1986 than three years earlier? The answer was generally "no" when Louis Harris polled adults in 1983 and again in 1986.⁽²⁾ (However, in some cases the lack of significant improvement is due to the fact that the vast majority of people already are practicing positive health habits and further improvement will be difficult to achieve.)

While a few indicators of health had improved during the three-year period--

- o the percent of Americans using safety belts "all the time" rose from 19 percent to an impressive 55 percent;
- o females who "try a lot" to get enough calcium rose from 53 percent to 66 percent;
- o and those who take steps to control stress crept up from 59 percent to 64 percent--

most indicators remained almost constant or decreased. For example,

- o the percent of adults who do not smoke rose slightly from 70 percent to 72 percent;
- o those who exercise strenuously crept up from 83 percent to 86 percent;
- o but those who do not drink decreased from 34 percent to 32 percent, and
- o those who never experience stress dropped from 16 percent to just 10 percent of those surveyed.

The survey did show that Americans appear to be utilizing some preventive services more in 1986 than they were four years earlier, although the improvements were not always significant. While most of these preventive services are administered by a health professional, they are relatively easy and inexpensive.

- o The percent of women doing breast self exam showed one of the most impressive changes, increasing from 37 percent in 1983 to 45 percent in 1986.
- o Women having a pap smear once or more a year increased from 75 percent to 80 percent.
- o Those receiving a dental exam once or more a year increased from 71 percent to 76 percent.
- o Those receiving a cholesterol blood test once or more a year increased from 43 percent in 1984 to 46 percent in 1986. (The question was not asked in the 1983 survey.)

- o Those having their blood pressures read once or more a year grew only slightly from 83 percent to 85 percent.

The Harris survey, sponsored annually by Prevention Magazine, shows consistently that older people practice more preventive lifestyle habits than young people. Those aged 65 or over reported the best lifestyle habits while those aged 18 to 24 reported the poorest health habits.

A single copy of the 28-page summary report, Prevention Index '87, is available without charge from The Prevention Index, 33 Minor Street, Emmaus, PA 18098.

HEALTH BEHAVIORS VARY DRAMATICALLY FROM STATE TO STATE

A 1986 telephone survey of self-reported health behaviors in 25 states and the District of Columbia reveals that individuals' lifestyles vary dramatically from area to area.⁽³⁾ For example, drinking and driving varied over six-fold from a low of 1.5 percent in Kentucky to a high of 9.6 percent in Wisconsin, and nonuse of safety belts varied over eight-fold from 8.8 percent in Hawaii to 71.2 percent in North Dakota. Thus, while national data about the percentage of adults who smoke, fail to use safety belts, or drink heavily are interesting, they do not necessarily reflect the health behaviors of residents in a given state.

Highs and lows for other health behaviors showed similar variations among states.

Current Smokers: 34.7 percent in Kentucky
18.2 percent in Utah

Heavy Drinking (total alcohol intake exceeding 60 drinks per month):

10.8 percent in Wisconsin
3.7 percent in Tennessee

Binge Drinking (five or more drinks on an occasion one or more times in the past month):

29.6 percent in Wisconsin
7.2 percent in South Carolina

Overweight:

28.7 percent in Wisconsin
16.5 percent in Hawaii

Sedentary Lifestyle:

72.2 percent in Kentucky
48.0 percent in Hawaii

The Behavioral Risk Factor Surveillance Survey was conducted by the Center for Health Promotion and Education of the Centers for Disease Control. Additional information was collected on high blood pressure treatment and nonpharmacologic practices; physical activity during leisure time; dieting practices; attempts at smoking cessation; smokeless tobacco use; and wine, beer and liquor use.

The differences among the states in the rates of these risk factors and health practices demonstrate the value of state-specific data, which can be used to set state health objectives, to support legislation on such issues as clean indoor air and seat belt use, and to inform the public about the status and importance of personal health practices.

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COMPREHENSIVE WORKSITE HEALTH PROMOTION PROGRAMS

Evaluation studies have been conducted on four major comprehensive health promotion programs in recent years--Control Data Corporation, AT&T Communications, Johnson & Johnson, and Blue Cross and Blue Shield of Indiana. Following are summaries of the findings of these studies.

EMPLOYEES WITH UNHEALTHY LIFESTYLES COST BUSINESSES MORE: CDC

A study of Control Data Corporation's (CDC) employees has shown that, generally, persons with unhealthy lifestyles use more medical care and generate higher health claim costs than those with healthier lifestyles.(4)

Results were reported in three categories: non-maternity claim costs, hospital inpatient days per 1,000, and percent of claims over \$5,000. In all three categories, and for all lifestyle factors except one, results showed that employees with poor health habits cost employers more money than those with positive habits (not smoking, exercising, using safety belts, etc.). Among the lifestyle habits studied were smoking, exercise, use of safety belts, weight, cholesterol levels, hypertension, and alcohol use.

The data base for the study was created from 1981 to 1984, and includes some 40,000 life years for employees at 27 CDC locations throughout the U.S. Because adequate data were not available for them, spouses and children of employees were not included in the study.

Non-Maternity Health Care Claim Costs

Employees with poor health habits generate higher non-maternity health care claim costs than those with healthy lifestyles.

- o Smokers of one pack of cigarettes per day or more generate health claim costs 18 percent higher than nonsmokers; those who smoke from one cigarette to one pack per day accrue claim costs 10 percent higher than nonsmokers.
- o Persons who do not exercise vigorously and regularly (equal to climbing 15 flights of stairs or walking 1.5 miles four times per week) have about 14 percent higher health care claim costs than those who do.
- o Those who wear safety belts less than 25 percent of the time have health claim costs approximately 13 percent higher than those who wear them more than 75 percent of the time.
- o Individuals who are 30 percent or more above their desirable weight have 11 percent higher claim costs than those who are less than 20 percent above their desirable weight.
- o Persons at high risk for hypertension (reading of 159mm over 94mm or higher) have health care claim costs 11 percent higher than those with normal blood pressure.

Hospital Inpatient Days per 1,000

Employees with unhealthy lifestyle habits also have more hospital inpatient days per 1,000 than those with healthy habits.

- o Those who wear safety belts 25 percent of the time or less have 54 percent more hospital inpatient days than those with usage at 75 percent or more.
- o Persons 30 percent or more above their desirable weight have 45 percent more inpatient days than those who are

- less than 20 percent above desirable levels.
- o Employees who do not exercise regularly and vigorously have 30 percent more inpatient days than those who do.
 - o Heavy smokers and those at high risk for hypertension have 25 percent more inpatient days than their counterparts who do not smoke and have normal blood pressures.
 - o Individuals with high cholesterol levels have 16 percent more inpatient days than those with low levels.

Percent of Health Care Claims Over \$5,000

Health habits also affect the size of claims when an individual becomes ill. Those with poor lifestyle habits generate a higher percentage of claims over \$5,000 than those with healthier habits.

- o Persons at high risk for hypertension are 68 percent more likely to have claims over \$5,000 than those with normal blood pressure.
- o Employees more than 30 percent above their desirable weight are 48 percent more likely to have claims over \$5,000 than those less than 20 percent above their desirable weight.
- o Those who do not exercise regularly and vigorously are 41 percent more likely to have claims over \$5,000 than those who do.
- o Individuals who wear safety belts less than 25 percent of the time are 36 percent more likely to have claims over \$5,000 than those who wear them 75 percent of the time or more.
- o Heavy smokers are 29 percent more likely to have claims over \$5,000 than nonsmokers.
- o Persons with high cholesterol levels are 24 percent more likely to have claims over \$5,000 than those with low levels.

Alcohol Use Findings Unexpected

One of the most surprising results of the study was the inverse relationship between the use of alcohol and medical claims. In all three categories--non-maternity claim costs, hospital inpatient days per 1,000 and percent of claims over \$5,000--heavy users of alcohol (24 or more drinks per week) had lower utilization and lower costs than low users. The researchers offered several possible explanations for this unusual finding.

First, the sample of heavy alcohol users was very small, with only two percent of the participants reporting high use. Second, those who did report heavy use were primarily males under age 40; generally heavy drinking takes its physical toll after age 40. Third, there may be an under-reporting of claims or under-utilization of medical care in the heavy use category because people may be reluctant to admit a drinking problem or seek treatment. Fourth, heavy drinkers may tend to inaccurately report their drinking patterns when completing a study conducted at the worksite (even though results were confidential), or they may choose not to take part at all, thus they may be under represented in the sample.

Potential Uses of Health Risk Status Data by Businesses

Based on the data, Control Data Corporation suggests several potential uses by businesses for information about the health status of employees.

Flexible Benefits Plans--Health risk status can be an integral part of a flexible benefit plan. The credits available to an employee to choose a benefit package could vary by health risk status. For example, employees with poor health habits could be given fewer "benefit dollars" to spend or could have to

pay more for certain benefits such as medical insurance. The benefit dollars available to employees also could vary by benefits selected (e.g. employees completing a smoking cessation or nutrition class could earn additional benefit dollars).

Employee Medical Contributions--An employer may want to encourage good health by basing employee medical contributions on the expected claim cost for positive health habits. Under this system, employees with poor lifestyle habits will have greater expected claim costs, but also will make greater contributions. This must be done carefully, however, to ensure that the contribution rate varies only based on behavioral health status characteristics within the employee's control. Those characteristics outside his/her control, such as family history, age and sex, should not affect the employee's contribution rate.

Cost Management--Since medical claim costs vary by health risk status characteristics, an employer can build a cost management program around claims reduction through employee behavior changes in a health promotion program.

Provider Performance Evaluation--Companies can analyze the performance of providers by using health status information to help determine if a particular patient population actually needs more care than another. Providers, too, can use health risk status along with medical records to focus their efforts on high risk individuals.

Insurance Pricing--Health risk status can be used as another rating category, along with traditional insurance rating variables such as age, sex, industry, and location, as well as to establish future expected claims costs and premium rates.

Plan Performance Measurement--Health risk status data can be used to review the cost of implementing a health promotion program compared with the benefits received. For example, an employer can compare the cost of a smoking cessation program with the expected reduction in medical claim costs. The employer can then make an informed decision about expanding the benefit package to include health promotion programs.

Health Risk Status Improvement--Health risk status information can identify the characteristics with the greatest potential savings based on the demographics of employees in each category of health risk status. For example, since younger people tend to exercise more than older people, an effective exercise program could be designed to encourage the participation of older employees.

A copy of the complete, 24-page report can be obtained for \$75 from Milliman & Robertson, Inc., 15700 Blue Mound Road, Brookfield, WI 53005.

AT&T WELLNESS PROGRAM COULD SAVE \$87 MILLION IN 10 YEARS

A pilot employee health promotion program at AT&T Communications has been shown to be effective both in helping employees change unhealthy lifestyle behaviors, therefore lowering their health risks, and in improving health-related and job-related attitudes among program participants.⁽⁵⁾

The financial benefits from the program could be equally dramatic. If the trends seen in the pilot were to continue over the next 10 years, AT&T Communications projects savings of \$72 million from reduced heart attacks and an additional \$15 million from reduced cancer, alone. Employees who participated in the Total Life Concept (TLC) programs, such as stress management, weight control, and interpersonal communications, showed improvements in their personal health that were greater than nonparticipants.

- o Physical fitness levels improved, with 46 percent increasing flexibility, 55 percent decreasing their heart rate on a step test, and 78 percent increasing their number of sit ups per minute;
- o blood pressure was decreased significantly, with 57

- percent achieving a normal blood pressure;
- o weight reduction averaged 10 pounds;
- o smoking cessation rates were 90 percent when the program concluded and at a 12 month follow up remained at 53 percent;
- o cholesterol was lowered an average of 23.5 mg/dl;
- o greater stress management ability was reported;
- o interpersonal skills of 50 percent of the participants reportedly improved, in turn improving daily communications in their lives;
- o low back pain improved, with 60 percent reporting a decrease in the severity of pain and 56 percent reporting a decrease in the frequency of low back pain.

These health and lifestyle improvements translated into reduced health risks for the program participants, including:

- o decreased risk of dying in the next 10 years,
- o decreased risk of heart attack,
- o decreased risks of cancer,
- o lower blood pressure,
- o lower cholesterol,
- o reduced weight, and
- o increased physical activity.

Members of the study group that participated in the programs also improved their health related attitudes and perceptions of their own health more than those in the control group. They reported:

- o increased commitments to change lifestyles,
- o increased awareness of good mental health, and
- o improved perceptions of AT&T and the belief that the company is concerned about their good health.

It was found that even those who did not take the offered programs increased their positive perceptions of AT&T more than the control group. This last finding seemed to indicate that

employees view corporate health promotion as corporate support for their good health even if they do not actually participate.

Initially, the pilot was planned and designed to help employees cope with the changes brought on by the company's divestiture from Ma Bell. AT&T hoped the program would minimize the anticipated increased number of heart attacks and help employees manage the stress they might feel. Soon after, it was realized that the wellness program might offer even greater benefits for the corporation. Total Life Concept (TLC) was designed to create a corporate environment supportive of its employees improving their health practices in order to lower their health risks. As reported above, the pay-off benefit has been immediate.

J&J'S WELLNESS PARTICIPANTS CUT HOSPITAL COST INCREASES BY HALF

A five-year study of Johnson & Johnson's pilot comprehensive employee health promotion program has demonstrated that, if offered to all J&J employees, it could save \$1 million annually in improved health, reduced absenteeism, and a projected annual reduction in health care costs. This projection was said to be "a conservative estimate" of health care costs.⁽⁶⁾

The study of the "Live for Life" program found that program participants had only about half the increase in hospital costs of those employees who did not participate. Hospital costs for participants doubled over the study period while costs for non-participant increased four times.⁽⁷⁾ This difference in the two groups' costs meant a savings in hospital costs of \$980,316 from 1979 to 1983, or an average annual savings of \$245,079.⁽⁸⁾ Hospital costs account for nearly two-thirds of Johnson & Johnson's total health benefit costs. Other benefits among program participants included:

- o reduced hospital admissions,
- o reduced number of hospital days,
- o reduced absenteeism,
- o improved morale,
- o improved job satisfaction,
- o increased productivity, and
- o improved employee relations.

These financially beneficial improvements seemed to be the direct result of several widespread employee health changes, including an increase in their physical activity and a reduction in cigarette smoking. The study of the "Live for Life" program looked at 11,406 Johnson & Johnson employees in 18 states over a five-year period beginning in 1979.

"Live For Life's" offerings include programs in stress management, fitness, smoking cessation, nutrition, weight control, and health knowledge.

BCBSI WELLNESS PROGRAM RETURNS \$1.45 FOR EVERY \$1 INVESTED

Even though the number of medical claims for participants in an Indiana worksite wellness program was higher than for employees who did not participate, in the long run these participants generated much less in health care costs than the non-participants. Thus a five-year evaluation of the Blue Cross and Blue Shield of Indiana's (BCBSI) "Stay Alive & Well" program for its own employees showed that for each \$1 it invested in health promotion, it saved \$1.45 in health care costs.⁽⁹⁾

BCBSI attributes this across-the-company savings to the fact that while program participants made more numerous visits to doctors than non-participants, and thus had more medical claims, their visits tended to be for low-cost routine care. Non-participants,

on the other hand, made fewer visits to doctors, and thus had fewer claims, but those claims were for more serious health problems and costly injuries. When all costs for the health promotion program were accounted for, the study concluded that, on average, the program saved \$1.43 in insurance benefit utilization for every employee (including non-participants), or a 1:1.45 return-on-investment ratio.

The "Stay Alive & Well" program was designed after a 1976 review of the company-offered employee health program, which concluded that there was actually very little return, in terms of lowered health care costs, on BCBSI's investment. The next year the new program "Stay Alive & Well" was made available to all of its 2400 employees, spouses, and retirees on a voluntary participation basis. The study covered 667 participants and 892 non-participants.

The program focuses on health risk identification and reduction. Programs aimed at improving employee health and well-being include nutrition, physical fitness, weight loss, stress management, accident prevention, smoking cessation, breast self-exam, hypertension, first aid, and employee counseling. All programs, with the exception of physical fitness classes, are given at the worksite during business hours.

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MEDIA REPORT RESEARCH UPDATES

Following are reports of selected research findings that have been published since the original Worksite Wellness Media Report was issued on the topic or that were not covered in the original report.

SMOKING RESEARCH UPDATE

SMOKERS WHO QUIT DECREASE RISK OF STROKE BY MORE THAN HALF

A study examining the relation between smoking and the risk for stroke has concluded that smoking does, indeed, increase the risk; but the additional message was that it is not too late for smokers to quit their habit and decrease this risk significantly. (10)

Smokers who quit over the course of the study still had a slightly increased risk over non-smokers, but compared with those participants who continued to smoke, the risk for quitters was decreased by more than half.

In a 12 year study of 7,872 men of Japanese ancestry in Hawaii, smokers were found to be two to three times more likely to suffer from a thromboembolic stroke than were non-smokers, and were four to six times more likely than non-smokers to suffer from the less common but more lethal hemorrhagic stroke. In a thromboembolic stroke, a blood clot that has formed somewhere in the body eventually is transported to the brain where it lodges in a vessel. In the hemorrhagic, a blood vessel in the brain ruptures.

None of the participants had suffered a stroke up until the time that the study began. Yet over the course of the study, 171 of

the smokers had a stroke compared with 117 of the non-smokers. At the beginning of the study, 3,435 of the participants smoked and 4,437 did not.

SMOKING INCREASES MOTOR VEHICLE ACCIDENTS AND TRAFFIC VIOLATIONS

A study comparing the motor vehicle driving records of smokers with non-smokers found that smokers had 50 percent more traffic accidents than non-smokers and 46 percent more traffic violations.⁽¹¹⁾ The study identified several reasons for the smokers' increased risk of being involved in accidents and violations, including

- o their more frequent use of alcohol and drugs,
- o their greater risk-taking behavior, and
- o their diminished attention to their driving, due to the distractions associated with smoking.

More frequent consumption of alcohol was cited as one explanation for the increased accidents and traffic violations. Smokers have a 3.4 times larger arrest incidence record for drunken driving than non-smokers. Carbon monoxide and nicotine from cigarette smoking have also been found to impair the brain functions of smokers similarly to the results from alcohol consumption. These impairments include slower reaction time and slower decision-making, and are caused by smoking even when alcohol is not consumed.

Smokers were found to have an increased willingness to take risks over non-smokers, and also display, in general, certain personality traits that may influence driving behavior--including impulsiveness, immaturity, and extroversion. Speeding, failing to stop for red lights, and not wearing a seat belt were cited as some of the common risks that smokers were found to take.

Diminished attention to their driving was the final explanation given for the study's findings. Such common physical distractions as leaning over to light a cigarette, bending over to use an ashtray, and dropping ashes in their laps were some of the most frequently cited reasons for collisions while smoking.

The study was conducted over a two year period in Worcester County, Massachusetts. It involved 3714 participants; 1715 drivers from the Probation Alternative Traffic School, and 1999 drivers who had been involved in an accident or had been cited for a violation and who were applying for license renewals at the Registry of Motor Vehicles.

SMOKING COSTS U.S. \$53.7 BILLION IN MEDICAL, SALARY COSTS YEARLY

Smoking costs the United States at least \$53.7 billion in direct medical costs and salary losses according to a study that measured the economic impact in 1984 of smoking related illness and death.(12)

These cost estimates were calculated by comparing the health costs and income losses from smokers in excess of the same amounts incurred by non-smokers. The study, conducted by five health economists, including the former director of the government's National Center for Health Statistics, concluded that smokers are sicker and require more medical care than non-smokers.

The components of the \$53.7 billion price tag were broken out as follows:

- o Direct medical costs such as doctor bills, drugs, and hospital and nursing home expenses were \$23.3 billion more for smokers than the average for non-smokers.
- o A total of nearly \$9.3 billion was lost in salaries due to

smokers being sick with smoking-related diseases (lung cancer, heart attacks, stroke, emphysema, and other respiratory illnesses).

- o In 1984, lifetime earning losses from smoking related deaths were approximately \$21.1 billion.

The authors characterize their findings as "conservative" since they "did not take into account the adverse effects of passive smoking, risks of abortions, stillbirths and neonatal deaths, or deaths under age 20 that might be associated with smoking."

STRESS RESEARCH UPDATE

AGE, INCOME, EDUCATION, LIFESTYLE CAN PREDICT STRESS LEVELS

A national survey has found that age, income, education, and lifestyle appear to be related to levels of stress reported by adults.⁽¹³⁾ The survey also found that almost 70 percent of respondents reported seeking help for stress in the previous two weeks, often from a friend or relative rather than from a health professional.

Five questions on stress were asked in the Health Promotion and Disease Prevention Questionnaire of the U.S. government sponsored 1985 National Health Interview Survey. These questions inquired about the amount of stress experienced over the previous two weeks, whether or not seeking professional or non-professional help was considered, and if it was sought, from whom, and about the individual's lifestyle habits.

Findings were as follows:

Stress Experienced During Previous Two Weeks

- o 75 percent of the respondents reported having had at least

some stress in the previous two weeks and nearly 50 percent said they had experienced "a lot" or "a moderate amount."

- o 23 percent of the women versus 18 percent of the men reported experiencing a lot of stress.
- o This difference in stress between men and women increased with age. Women 65 years of age and older were twice as likely as the men of that age group to report a lot of stress.
- o Income and education levels of respondents affected their stress levels bipolarly. Those respondents with greater family income and more education and those with low family incomes, under \$5000, reported similar stress rates.
- o Unemployed women under 65 years of age reported somewhat lower levels of stress than employed women of this age group, but unemployed men in this age group reported a lot more stress than their counterparts.

Daily Health Habits and Stress

- o Both men and women who rarely or never ate breakfast were more likely to report high stress levels.
- o Sleeping six or fewer hours per night and being physically inactive also produced high levels.
- o Among men and women, alcohol consumption increased stress levels.
- o Among current or former occasional female smokers a lot of stress was more often reported than among all the women respondents as a whole.

Seeking Help for Stress

- o Women were more likely than men to report that they considered seeking help.
- o Family or friends were the preferred source of help among both sexes rather than professional help or self-help groups.

- o About 68 percent of the men and 69 percent of the women reported actually seeking help.

SAFETY BELT RESEARCH UPDATE

SURVEYS REVEAL SIGNIFICANT INCREASES IN SAFETY BELT USAGE

Louis Harris surveys, conducted in 1984, 1985, and 1986, reported that 27 percent, 41 percent, and 55 percent of its responding adults, respectively, reported wearing safety belts "all the time." (14)

A study of 28 incentive programs at 10 corporate worksites were found to be very successful in achieving rapid increases in seat belt usage, ranging from a minimum long-term gain of 12 percent to a maximum long-term gain of 285 percent.(15) Among the methods used to relay the safety belt message to employees and to assist the enforcement of the laws are, employee education (including films and literature, safety meetings, employee newsletters, pamphlet racks in offices, displays/posters in lobbies, bumper stickers, dashboard stickers), special projects/programs involving employees, employers, and the community, and constant communication between management and employees regarding the importance of the program.

Driver safety belt use measured in 19 cities throughout the U.S. increased five percent, from 34.2 percent to 39.2 percent, from the first six month period of 1986 to the last six month period.(16)

CHILD SAFETY BELTS, REAR SEAT LAP BELTS SHOWN EFFECTIVE

In addition to driver seat belt usage, child safety seat usage and rear seat lap belt use are now also being encouraged as data

and analysis regarding their successful injury prevention rate become available.

- o Properly used child safety seats decreased the chance of a minor injury by 50 percent, the need for hospitalization by 67 percent, and a fatality in a crash by 71 percent. (17)
- o Recent evidence has also found that correct rear seat lap belts in passenger motor vehicles are 11 percent effective in preventing an injury; 33 percent effective in preventing moderate to serious injuries; 37 percent effective for preventing serious injuries; and 17 to 26 percent effective in preventing fatalities for passengers age five or older. (18)

NUTRITION AND WEIGHT LOSS RESEARCH UPDATE

WEIGHT LOSS COMPETITIONS MORE SUCCESSFUL THAN COURSES

In a study that compared the use of weight-loss competitions with the use of weight control courses, competition proved to be overall more successful and more cost-effective. In addition, the competition appeared to be more effective in attracting men than the courses. An eight week commercial weight loss program was compared with a four week weight loss competition.

- o The weight loss competition attracted 129 employees (23 percent of the total 550 employees) whereas the courses had 80 participants (15 percent).
- o 19 percent of the competition participants were men, while 7 percent of the course participants were men.
- o Mean weekly weight losses were very similar between the two groups: course 1.04 pounds and competition 0.94 pounds.

o But cost per pound of weight lost greatly differed. For the course it was \$7.19 and for the competition it was just \$1.60. (19)

USE OF INCENTIVES CONTRIBUTE TO SUCCESS OF WEIGHT LOSS PROGRAMS

In a study on the use of incentives to reduce attrition, 48 participants in a behavioral worksite weight-loss intervention program were randomly assigned to either a group that received incentives or to a control group that did not. Both groups then completed a 14-session weight-loss program. Results showed that significantly more participants in the incentive group completed the program than in the control group (60 percent compared with 20 percent), and they attended more of the sessions than the control group members. These findings seem to indicate that the use of incentives can help reduce attrition. (20)

In a worksite weight control program using financial incentives, 131 university employees set weight loss goals ranging from 0 to 60 pounds. Incentives of \$5 to \$30 were to be deducted from each participant's paycheck for six months and returned in whole or in part, depending on the portion of weight loss goal achieved. Four group protocols were set up and the group was randomly divided. These four protocols were group education sessions vs. self-instruction only, and required vs. optional attendance at weigh-ins and group sessions. Just over 21 percent of those beginning the program dropped out and the mean weight loss of those remaining in the program was 12.2 pounds. It was found that the amount of weight lost was positively linked with attendance at the weigh-ins and sessions. The program also was found to be as effective when offered with professionally led educational sessions as when accompanied by self-instructional materials only. (21)

OBESITY MAY RESULT FROM LACK OF ACTIVITY, NOT OVEREATING

A recent report on the nation's 32 million overweight adults suggests that the prevalence of overweight persons is not the result of excess consumption of calories but rather the result of "very low levels of physical activity." Other nutrition-related problems were found to be overconsumption of fat, sodium, cholesterol, and saturated fatty acids. These problems and obesity both increase the risk of developing cardiovascular disease, hypertension, and diabetes. (22)

The report, issued by the Joint Nutrition Monitoring Evaluation Committee of the U.S. Department of Health and Human Services and the U.S. Department of Agriculture, found that obesity and overconsumption of the various nutrients are both more prevalent among the low-income population. Women were also a high risk group for nutrition related problems.

Among the findings were:

- o Children and women of childbearing age, especially black or poor women, often suffer from low iron intake.
- o Low calcium intake is common among women, which may lead to the development of osteoporosis when they reach post menopause.
- o Women who are black or poor frequently are overweight.
- o The poor often are found to have impaired vitamin C status. This is especially true of low-income adult males who smoke.

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All About WBGH

The Washington Business Group on Health (WBGH), established in 1974, gives the business community a credible voice in the formulation of federal and state health policy. Started as a member coalition of large corporations, WBGH began with five companies and has grown steadily to include almost 200 of the Fortune 500 companies. WBGH members direct the health care purchasing for more than 50 million of their employees, retirees and dependents.

In 1976, WBGH expanded to become the first national employer organization dedicated to medical care cost management. Its primary purpose is to identify and enunciate the needs and concerns of large employers. WBGH is an active participant in discussions, hearings and other aspects of the legislative and regulatory arena. It also serves as a reliable resource base providing information and expertise on a variety of health care issues and concerns as well as consulting to its members, government and other employers.

WBGH developed research capacity through its institutes to provide long-range planning and analysis with a corporate perspective. Under the research umbrella are: the Institute on Aging, Work and Health; Family Health Program; Institute for Organizational Health and the Institute for Rehabilitation and Disability Management. WBGH also publishes two magazines, *Business and Health* and *Corporate Commentary*, and other resource information, reports, studies and surveys.

WBGH assists the business community with a speakers bureau, Policy Exchange telecommunications network, and a yearly conference to discuss new health policy issues, cost management strategies, benefits design solutions and health promotion ideas. WBGH has been instrumental in helping form over 35 local business health care coalitions across the nation.