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TOBACCO: THE TRIGGER TO OTHER HIGH RISK HEALTH BEHAVIORS

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ABSTRACT

Due to the rapidly rising costs of health care for business, a health survey was developed and administered to employees at a manufacturing operation in Pennsylvania in January 2003. The purpose of the survey was to identify high-risk health behaviors practiced by employees of the business and try to prevent them in the future.

One of the high-risk health behaviors uncovered by the survey was heavy tobacco use by employees. There was a strong statistical relationship between use of tobacco and lower educational levels (p = .001) and lack of physical activity (p = .017). There was also a strong relationship between using tobacco and consuming more than two alcoholic drinks per day (p = .000). This information prompted the employer to ban use of tobacco anywhere on company property all the way to the exit road from the plant.

This paper will explore the extent to which tobacco use can also be a trigger to the start of other high risk health behaviors like alcohol abuse and physical inactivity.

INTRODUCTION

According to McGinnis and Foege (1993) the leading cause of death in the United States is tobacco use. Tobacco use harms every organ of the body, causing many chronic diseases and reduces the quality of life and expectancy. This dangerous product claims 430,000 deaths every year and another 86,000 individuals die from second hand smoke.

The Centers for Disease Control and Prevention (CDC) (2004), approximately 20.9 percent of adults in the United States were using tobacco. This prevalence of smoking was lower than the 22.5 percent reported one year earlier. Tobacco use prevention programs appear to be reducing the use of tobacco by adults in this country over the last several years

The CDC (2005) estimates that 165.5 billion dollars is spent annually by employers for workers who use tobacco products. The Framingham Study, a 50 year study of chronic diseases which ended in 1997, claims that avoiding tobacco, eating a sensible diet and walking only 15 miles each week will help workers avoid expensive chronic diseases.

It seems like preventing worker illness would provide a solid opportunity for the employer to do everything in their power to keep their workers well. As of 1998-1999, 69.3 percent of U.S. workers reported that the place where they worked had an official policy that prohibited smoking in work areas compared with 46.5 percent in 1993. Despite this progress many workers in this country are still not protected from second hand smoke.

A health survey was developed and administered to employees of a manufacturing operation in Luzerne County, Pennsylvania in January 2003 to identify high-risk health behaviors practiced by employees of this business.

METHODOLOGY

A health survey was developed and administered to employees of a manufacturing operation in Luzerne County, Pennsylvania in January 2003 to identify high-risk health behaviors practiced by employees of this business.

The survey was distributed to eight hundred employees; the number of returned surveys was 406, a response rate of fifty-one percent. The survey was constructed to elicit general demographic information, health and lifestyle factors (including health conditions, tobacco usage, alcohol consumption, driving habits, and exercise), the impact of health issues on lifestyle, and participation in health promotion activities.

The survey data was analyzed initially by categorizing the survey respondents into one of three categories: nonsmokers, light smokers (under half pack per day) and regular smokers (at least a half pack of cigarettes per day). All analyses were based upon this classification system.

Next, descriptive statistics were computed on the variables of interest (means, standard deviations, percentages) for each category. Then, chi-square analyses were performed to assess significant differences among the categories based upon four demographic variables: sex, age, income and education. Additional chi-square analyses were conducted to assess relationships between the categories and the employees' "health in general" and "physical activity." An ANOVA was also performed to assess the relationship between alcohol consumption and the three smoking categories. Based upon a significant F-statistic from the ANOVA, a Tukey-Kramer post-hoc analysis was performed to determine which categories were significantly different for alcohol consumption. An alpha level of .05 was used for all analyses to determine significant findings.

RESULTS

The company estimated that 54 percent of their employees smoke cigarettes on a daily basis. This estimate of tobacco use is more that double the national average. Although the survey findings did not result in a percentage as high as the company estimated, it did show 36.5 percent of survey respondents (12.1% for light smoking and 24.4% for regular smoking) indicated smoking every day, which is still significantly ($p < .001$) higher than the national average.

Demographic analysis of the three categories by sex did not reveal any statistical significant differences. Similarly, age was unrelated to smoking classification. Interestingly, significant differences were found based upon income levels (see table 1). Chi-square analysis showed that employees earning under $40,000 per year were significantly more likely to be regular smokers than employees earning over $40,000 per year. Similarly, chi-square analysis revealed significant differences in smoking categories based upon educational level (see table 2). Employees that did not attend college were much more likely to be a light or regular smoker as compared to employees that pursued a college degree.

The next series of analysis examined the extent to which these three smoking categories were related to various health outcomes. To begin these analysis employees were asked to rate their "health in general" on a 1 (poor) to 5 (excellent) scale. Here again chi-square analysis (see table 3) showed significant differences based upon smoking classification. Not surprisingly, regular smokers were the least likely group of the three to rate their health very good or excellent.

Table 1: Smoking category by income differences			
	Nonsmoker	Light smoker	Regular smoker
Salary under $40,000	43.3% (87)	55.8% (24)	58.6% (51)
Salary over $40,000	56.7% (114)	44.2% (19)	41.4% (36)
Chi-square = 6.65, p <.05			

Table 2: :Smoking category by educational differences			
	Nonsmoker	Light smoker	Regular smoker
H.S. degree or less	53.0% (134)	73.5% (36)	71.4% (70)
Beyond H.S. degree	47.0% (119)	26.5% (13)	28.6% (28)
Chi-square = 14.26, p < .001			

Table 3: "Your health in general" and smoking status			
	Nonsmoker	Light smoker	Regular smoker
Excellent/Very good	53.0% (132)	63.3% (31)	36.4% (36)
Good	37.8% (94)	30.6% (15)	47.5% (47)
Fair / poor	9.2% (23)	6.1% (3)	16.2% (16)
Chi-square = 12.88, p < .02			

Next, the connection between smoking and exercise was examined. Employees were asked to disclose the number of times per week they engage in at least 20 minutes of vigorous physical activity. As expected, regular smokers were significantly more likely to not engage in any physical activity per week compared to the other two categories (see table 4).

Table 4: "How many times per week do you engage in vigorous (aerobic) physical activity that last at least 20 minutes?" and smoking status			
# of times per week	Nonsmoker	Light smoker	Regular smoker
Zero	30.5% (75)	30.6% (15)	46.9% (45)
One or Two	34.1% (84)	38.8% (19)	34.4% (33)
Three or more	35.4% (87)	30.6% (15)	18.8% (18)
Chi-square = 12.09, p = .017			

The final analysis assessed the relationship between smoking and drinking alcoholic beverages. Employees were asked to indicate the typical number of alcoholic beverages they consume each week. Regular smokers had the highest average (7.26) followed by light smokers

(4.67) and nonsmokers (3.32). A Tukey-Kramer analysis revealed a statistically significant difference between nonsmokers and regular smokers in regards to alcohol consumption ($p < .05$).

DISCUSSION

A health survey was developed and administered to employees in a manufacturing operation in January 2003 to identify high-risk health behaviors practiced by and chronic diseases present in employees. The population was examined based on their demographic characteristics, the perceived impact of life style on health and their use of medical services. The goal was to raise the awareness of health issues among employees, identify areas how the employer could facilitate better health behavior among employees, and shift the locus of control to the employee to improve their health status.

The survey was constructed to elicit general demographic information, health and lifestyle factors (including health conditions, tobacco usage, alcohol consumption, driving habits, and exercise), the impact of health issues on lifestyle, use of medical services, and participation in health promotion activities. The goal was to identify relationships between these factors that could be developed to improve the employee's health.

From the data analysis it was apparent that tobacco use was statistically implicated with lack of physical activity and higher alcohol consumption. If tobacco use can predispose individuals to other high-risk health behaviors employers need to do everything possible to prevent tobacco use in the workplace. This would reduce employers costs of health insurance and help to keep their employees healthy.

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