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Health Behaviors of Operating Engineers

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RESEARCH ABSTRACT

Operating Engineers (heavy equipment operators in construction) may be at particular risk for heart disease and cancer related to their exposure to environmental dust and smoking, the sedentary nature of their job, and long hours of exposure to the sun. The aim of this study was to characterize the health behaviors of Operating Engineers. This cross-sectional survey from a convenience sample of Operating Engineers ($N = 498$) used validated instruments to measure smoking, drinking, diet, exercise, sleep, and sun exposure. Univariate and bivariate analyses to detect differences by age were conducted. The sample scored significantly worse on all five health behaviors compared to population norms. Those who were older were less likely to smoke and chew tobacco and more likely to eat fruits and vegetables. Many were interested in services to improve their health behaviors. Health behavior interventions are needed and wanted by Operating Engineers.

Blue collar workers are at increased risk for heart disease (Tenkanen, Sjoblom, Kalimo, Alikoski, & Harma, 1997) and cancer (Rosengren & Wilhelmsen, 2004), the major causes of mortality among Western populations. Heart disease and cancer are largely impacted by health behaviors. Although smoking prevalence in particular is known to be high among blue collar workers (Barbeau, Krieger, & Soobader, 2004), little is known about the overall health behaviors of blue collar workers. Even less is known about one group of blue collar workers, Operating Engineers (heavy equipment operators in construction), who may be at

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particular risk for poor health due to their exposure to the interaction of dust and smoking, the sedentary nature of their jobs, and long hours of exposure to the sun. To determine the types of interventions needed and desired by this population, the objective of this study was to describe the health behaviors of Operating Engineers in Michigan.

BACKGROUND AND LITERATURE REVIEW

Smoking and Alcohol Use

The increased prevalence of smoking among blue collar workers and construction workers is well documented (Lee et al., 2007). The gap between white collar and blue collar smokers is widening. According to the National Institute for Occupational Safety and Health (NIOSH, 2002), blue collar workers were 75% more likely to smoke than white collar workers in 1997, an increase from the 38% observed between 1978 and 1980. Furthermore, a survey conducted between 2006 and 2008 found that 42.9% of construction workers smoked compared to 28.4% of full-time employees 18 to 64 years old (Substance Abuse and Mental Health Services Administration, 2009). Operating Engineers (heavy equipment operators in construction) are at particular risk for lung disease because they are exposed to dust, which, along with smoking, may result in lung diseases such as asthma, emphysema, pneumoconiosis, and lung cancer (Stern & HaringSweeney, 1997; Wang, Dement, & Lipscomb, 1999).

U.S. construction workers were found to have a higher risk of being under the influence of alcohol at work compared to workers in low-risk occupations such as education, engineering, and health care (Frone, 2006). A crude rate of alcohol dependence or abuse disorder of more than 13% was reported for four construction trades, including construction laborers, other construction trades, equipment handlers, and carpenters, compared to 6.5% in the general population (Mandell, Eaton, Anthony, & Garrison, 1992). Moreover, construction workers have been found to have higher rates of death related to alcoholism and cirrhosis of the liver (Wang et al., 1999), and higher rates of fatal non-work-related injuries while under the influence of alcohol (Lipscomb, Dement, & Rodriguez-Acosta, 2000).

Diet, Physical Activity, Sleep, and Sun Exposure

Few studies have evaluated diet, levels of physical activity, sleep, and sun exposure among blue collar workers. In fact, no studies were found about diet and occupational class. One study found lower levels of leisure-time physical activity among blue collar workers (Caban-Mar-tinez et al., 2007). Lower levels of physical activity may be associated with lower levels of job control (Smith, Frank, Mustard, & Bondy, 2008). In terms of sleep, one study showed a positive correlation between sleep disorders and injuries among construction workers (Chau et al., 2004). Only one study evaluated occupational sun exposure among construction workers, finding an increased relative risk of myeloid leukemia, malignant melanoma (only for tumors of the head, face, neck, and eye), and lip cancer compared to the Swedish male population in 1980 (Hakansson, Floderus, Gustavsson, Feychting, & Hallin, 2001).

Depression

When evaluating health habits, it can be instructive to determine rates of depression because depression is associated with a decline in almost all health habits, including smoking (Breslau, Novak, & Kessler, 2004), problem drinking (Hasin, Stinson, Ogburn, & Grant, 2007), overeating or undereating (Kivimaki et al., 2009), physical activity (Wiles, Haase, Gallacher, Lawlor, & Lewis, 2007), and sleep (Berk, 2009). Studies indicate higher levels of depression among construction workers and higher levels of mortality related to mental

disorders (Wang et al., 1999). Higher rates of depression have been observed among Operating Engineers, who also have been found to have higher levels of suicide than the general population (Stern & HaringSweeney, 1997).

Conceptual Framework

The research site for this study has had a long-standing relationship with leadership at the Michigan Operating Engineers Local 324 Training Center to provide hearing protection interventions. Because the union is now paying directly for membership health care, interest has increased in expanding health care interventions to improve the health habits of Operating Engineers. Using a community-based participatory research approach in which communities are actively engaged in the research process through partnerships with academic institutions, a needs assessment of the health behaviors of Operating Engineers was completed. Community-based participatory research is a “collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings. Research begins with a topic of importance to the community, has the aim of combining knowledge with action and achieving social change to improve health outcomes and eliminate health disparities” (Community-Campus Partnerships for Health, n.d.). The objective of this study was to describe the health behaviors of Operating Engineers. Information from this study will be used to guide the development of health behavior interventions for Operating Engineers.

METHODS

Design

An anonymous, cross-sectional survey was distributed to Operating Engineers while they attended a training course offered by the Operating Engineers Local 324. Information was collected on smoking, problem drinking, fruit and vegetable consumption, physical activity, sleep habits, sun exposure, and interest in related interventions. Additional information was collected on depression, comorbidities, workplace hazard exposure, and demographics. All attendees were told that participation was voluntary and they could choose not to participate. The university’s institutional review board approved the study prior to data collection.

Study Population, Setting, and Place

Local 324 Training Center of the International Union of Operating Engineers, Howell, Michigan, is the only training center for the entire state of Michigan. Thus, those who want to be or are working as Operating Engineers come to the Local 324 Training Center for a 3-year apprentice certification course and the 8-hour hazardous material (HAZMAT) refresher course. This convenience sample of Operating Engineers was recruited at the Local 324 Training Center during the winter courses of 2008.

Operating Engineers were asked to participate until a quota of 500 was reached. Ninety percent of the Operating Engineers who were asked to participate agreed and returned a survey. Two of the returned surveys were incomplete and excluded from the analysis, resulting in a final sample size of 498.

Procedure

The instructor explained the study to the attendees, distributed the survey packets (i.e., a study information sheet, health survey, and return envelope), and collected the completed surveys in sealed envelopes. Each participant received a \$10 gasoline gift card for returning the survey. The sealed envelopes were then returned to the study team.

Measures

Tobacco—Tobacco use was measured by asking respondents whether they currently smoked (or used other tobacco products), quit smoking or using tobacco products (within the past month, 6 months, 1 year, or more than 1 year ago), or never used tobacco products. Respondents were also asked about the specific types of tobacco used, including cigar, pipe, cigarillo, snuff and chew, and cigarettes. To measure motivation to quit smoking or using tobacco, respondents reported if they were thinking of quitting in the next 30 days, in the next 6 months, or not quitting at this time (Prochaska & Velicer, 1997).

Alcohol Use—Alcohol use was measured by first asking about participants' current drinking status, and then screening for excessive drinking using the well-known, validated Alcohol Use Disorders Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). A score of 8 or more on the AUDIT indicates problem drinking. In the general population, heavy drinking falls in the range of 7% to 13%, depending on measure used (Substance Abuse and Mental Health Services Administration, 2009).

Diet, Physical Activity, Body Mass Index, Sleep, and Sun Exposure—To assess diet, selected questions from the validated Willett Food Frequency questionnaire were used (Willett et al., 1985); respondents provided the average number of servings of fruit, vegetables, and fried foods they ate during the past year. In Michigan, 78.7% of adults did not consume the recommended five servings a day of fruits and vegetables (juices, salad, and potatoes included) (Fussman, Lyon-Callos, & Rafferty, 2008).

Physical activity during the previous year was assessed using a survey validated with healthy men 44 to 78 years old with an average physical activity score of 40.8 (Norman, Belloc, Bergstrom, & Wolk, 2001).

Self-reported height and weight were used to determine body mass index (BMI) (weight in kilograms divided by height in square meters). BMI was also used to measure nutritional/physical activity status; the 1999 to 2002 population mean for male adults 20 years and older in the United States was 27.8 kg/m² (Ogden, Fryar, Carroll, & Flegal, 2004).

Sleep was assessed using validated questions from the Medical Outcomes Study (MOS); scores ranged from 0 to 100 and the population mean of adults visiting a medical clinic was 72 (Hays, Sherbourne, & Mazel, 1995).

Because no well-known, published measures of sun exposure were identified, sun exposure was assessed using selected questions from a survey used to assess the sun safety behaviors of postal workers (Oh et al., 2004). Questions were also asked about the participants' interest in receiving services for smoking, alcohol, diet, exercise, sleep problems, sun exposure, and depression (i.e., yes/ no).

Health and Demographic Characteristics—Because depression is highly correlated with tobacco use (Breslau et al., 2004) and other health behaviors, depression was measured using the validated Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). An individual with a score of 16 or more is typically considered to be depressed. Comorbidities were measured using a validated self-report instrument (Mukerji et al., 2007). To assess workplace exposures, respondents were asked questions routinely asked of Operating Engineers by the Occupational Safety and Health Administration. Standard demographic questions were asked regarding age, sex, race, marital status, and educational level. The survey also included questions about employment (i.e., amount of job experience).

Statistical Methods

Means, medians, and frequencies were calculated for all variables. Because so few women and non-Whites participated in the study, only age differences in health behaviors were computed. Based on the median age, the sample was divided into two age groups (18 to 43 vs. 44 to 70 years). Differences in health behaviors by age were determined by *t* tests, chi-square tests of independence, Fisher's exact test, Wilcoxon-Mann-Whitney U tests, and Mood's median tests. In all cases, two-tailed *p* values of .05 or less were considered statistically significant. Interest in selected services was described by percentages.

RESULTS

Demographic and Health Characteristics

Demographic and health characteristics of this sample appear in Table 1. The mean age was 43 years, and most of the respondents were male, White, and married. The majority of the respondents had a high school education or less and 10 or more years of experience in this field. The majority were exposed to many hazards in the workplace, the most common being concrete dust (76%), heat stress (74%), welding fumes (72%), and asbestos (50%). However, only 64% had used respiratory protection on the job. Several comorbidities were present in this population, the most common being hypertension (26%) and arthritis (19%). Almost half scored positive for depressive symptoms.

Rates of Health Behaviors by Age Group

Table 2 details the health behaviors of the Operating Engineers by age group. Albeit not significant, fewer current smokers and more quitters were found among older workers. Younger smokers were significantly more likely to use smokeless tobacco than older workers ($p < .05$). Fewer older workers were current drinkers and more older workers had quit drinking more than 1 year ago ($p < .05$). Older workers were also significantly more likely to eat fruits ($p < .05$) and vegetables ($p < .05$) than younger workers. No significant differences regarding obesity, BMI, and physical activity, sleep, and sun exposure scores were found between older and younger workers. In both age groups, more than 80% were either overweight or obese. In both groups, about one third reported sunburn at least once and more than half burned more than once each summer; sunscreen use was low in both groups.

Interest in Receiving Health Services

Table 3 shows the Operating Engineers' interest in selected interventions. More than half of the smokers reported interest in receiving cessation services. Moreover, almost half of the total sample was interested in nutrition and exercise counseling. About one third of the total sample was interested in assistance with sleep problems. About 20% of those who screened positive for problem drinking were interested in assistance with drinking abstinence, and almost one fourth of those who screened positive for depression were interested in mental health counseling. Just more than 20% of the total sample was interested in assistance with sun protection.

DISCUSSION

Smoking and Alcohol Use

Smoking rates were about 50% higher in this population of Operating Engineers than the general population (Centers for Disease Control and Prevention [CDC], 2008a). Although workplace smoking bans have been an effective way to reduce smoking (Lemmens, Oenema, Knut, & Brug, 2008), outdoor workers such as Operating Engineers are not

affected by such bans. Because exposure to concrete dust was reported by three fourths of the respondents and only one third reported using a respirator, concurrent smoking is likely to contribute to the high rates of respiratory disease and cancer among this population (Stern & Haring Sweeney, 1997; Wang et al., 1999). In both groups, the smokeless tobacco rate was higher than population norms (i.e., about 6.5% among males [CDC, 2008b] vs. 15% of men in this sample) and twice as high among younger workers, reflecting this growing national trend (Tomar, 2007).

Smoking and drinking alcohol are highly correlated. In general, heavy drinkers are more likely to be smokers and have greater difficulty quitting (Leeman et al., 2008). In this population of Operating Engineers, the presence of problem drinking was higher than population norms, which are about 4.7% to 17.2% (Hasin et al., 2007; Substance Abuse and Mental Health Services Administration, 2009); about one third of younger workers scored positive for problem drinking compared to more than one fourth of older workers. The higher rates of drinking may contribute to higher rates of death related to alcoholism and cirrhosis of the liver and injuries.

Diet, Physical Activity, Sleep, and Sun Exposure

Fruit and vegetable intake was remarkably low in this population, particularly among younger participants. As a result, both younger and older Operating Engineers had higher rates of overweight and obesity. Michigan is ranked ninth for prevalence of obesity, with 29% of residents classified as obese (Trust for America's Health, 2009), but rates among Operating Engineers were almost twice as high as population norms. Unlike blue collar construction occupations such as carpenters or iron workers that have on-the-job physical activity, Operating Engineers have fairly sedentary jobs that involve sitting on heavy machinery; hence, their physical activity scores were similar to the general population norms. Nutrition and exercise counseling were both highly requested by this population, suggesting that Operating Engineers would like to lose weight.

Sleep scores were similar to population norms (Hays et al., 1995), yet about one third of the sample expressed interest in receiving services to improve sleep quality. Poor sleep quality is highly associated with both depression and alcohol misuse, with many individuals using alcohol to induce sleep (Brower, 2003). The rates of sunburn were high among both younger and older workers, with about one third of the Operating Engineers never using sun block.

Health Characteristics

Almost half of the Operating Engineers scored positive for probable depression, which is more than twice the rate in the general population (Pleis, Benson, & Schiller, 2003). Although the evidence is mixed, some studies show that a negative effect such as depression can lead to heart disease (Rumsfeld & Ho, 2005). Hypertension, a precursor to cardiovascular disease, was already present in about one fourth of this relatively young population. In general, the disease burden is high among depressed individuals, who are also high users of health care (Luber et al., 2000).

Depression was highly correlated with smoking; treating depression may enhance smoking cessation efforts (Duffy et al., 2006). Depression may also be correlated with high rates of problem drinking in this population. Despite the high rates of depression and problem drinking in this population and even though most have insurance to treat these disorders, little interest was shown in related services. Perhaps the social stigma related to these problems, particularly among men, may preclude many from seeking the help they need.

Study Limitations

This study is the first to provide a comprehensive overview of the magnitude of health behavior risk factors among Operating Engineers. Although the sample size was relatively large and the refusal rate low, it was a convenience sample of Operating Engineers who attended training sessions. Although similar to other studies of Michigan and midwestern Operating Engineers (Hong, 2005; Lusk et al., 1999), this sample may not be representative of the entire population of Operating Engineers in Michigan. Furthermore, future research might include the use of face-to-face assessments in addition to paper-and-pencil screening tools. Where possible, reliable and valid screening tools were used in the self-report survey, yet no face-to-face assessments were conducted to evaluate health behaviors, depression, and comorbidities.

IMPLICATIONS FOR PRACTICE

The high prevalence of poor health behaviors places this population of Operating Engineers at risk for many diseases, including heart disease and cancer. However, evidence-based interventions are available for Operating Engineers motivated to change their health behaviors. For example, interventions that provide both behavioral and pharmaceutical management have been found to be efficacious to reduce smoking and can be easily implemented via a variety of methods, including print materials, referral to state-supported 1-800-QUIT-NOW telephone counseling lines, and web-based cessation interventions. Pharmacological management, including nicotine replacement therapy, bupropion, and varenicline, has been shown to be efficacious (Duffy et al., 2006; Lemmens et al., 2008). Research has shown that when smoking cessation services are offered, quit rates increase (Doll, Peto, Boreham, & Sutherland, 2004).

Brief interventions for alcohol abuse (Blow et al., 2009) and referral to Alcoholics Anonymous have been found to be effective (Davis, Campbell, Tax, & Lieber, 2002). Nutrition and exercise counseling interventions can be instrumental in achieving and sustaining weight loss (Macfarlane & Thomas, 2010). However, a recent review found that established worksite nutrition and physical activity interventions may be of modest benefit (Anderson, 2009). Although implemented less frequently, interventions to improve sleep hygiene are available (Passarella & Duong, 2008) and may be beneficial for Operating Engineers, who must be alert when operating heavy equipment. Also rarely implemented are interventions to reduce sun exposure, which are relatively easy to disseminate and likely to reduce skin cancer in this population. The simple provision of on-the-job sun block or counseling to use sun protection would likely decrease the cancer risk due to sun exposure in this population.

Occupational health nurses can be instrumental in delivering behavioral interventions. Nurses have received health education and can relate health habits to workers' health. Nurses are also experts in community referrals. Nurses can coordinate treatments such as smoking cessation and depression medications with workers' personal health care providers. Nurse-led screening and intervention programs have been shown to be effective (Duffy et al., 2006; Rice & Stead, 2008).

CONCLUSION

This sample of Operating Engineers was found to have high levels of many health behavior risk factors compared to population norms, with slightly better health behaviors among older participants. The good news is that Operating Engineers are interested in interventions to change risky lifestyle behaviors. Worksite interventions to address health behaviors have the potential to reduce heart disease and cancer among Operating Engineers. Because many

unions (such as Local 324, which participated in this study) now pay directly for their members' health care, union members and leadership are motivated to improve the health of the membership. Moreover, recently passed health care legislation places an increasing emphasis on prevention and cost reductions. Continuing with the community-based participatory approach at Operating Engineers Local 324, the study site is currently testing the Tobacco Tactics (Duffy, Karvonen-Gutierrez, Ewing, & Smith, 2010) website intervention for Operating Engineers compared to referral to the state-supported 1-800-QUIT-NOW telephone line. Additional interventions to address the remaining health habits as well as comorbid depression are in the planning stages.

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Applying Research to Practice

Operating Engineers were found to have many health behavior risk factors, including smoking, drinking alcohol, diet, exercise, sleep, and sun exposure. An age effect should be considered when approaching this population because fewer older Operating Engineers tend to smoke and chew tobacco. Moreover, older Operating Engineers are also more likely to eat fruits and vegetables. Operating Engineers are interested in receiving services related to changing health behaviors. Worksite interventions aimed at prevention may reduce the risk of heart disease and cancer among Operating Engineers.

Table 1Demographic and Health Characteristics of Operating Engineers (*N*=498)

	N	%
Age (<i>N</i> =476)		
<i>M</i>	42.9 years	
<i>SD</i>	9.4 years	
Range	18–70 years	
Sex (<i>N</i> =482)		
Male	445	92
Female	37	8
Hispanic or Latino (<i>N</i> = 468)	18	4
Race (<i>N</i> =472)		
White	436	92
African American	15	3
American Indian	16	4
Other (mostly Asian/Pacific Islander)	5	1
Marital status (<i>N</i> =485)		
Married	329	68
Separated/widowed/divorced	80	16
Never married	76	16
Educational level (<i>N</i> = 485)		
High school or less	295	61
Some college or more	190	39
Years of job experience (<i>N</i> =483)		
<5	35	7
5–9	60	12
10–19	172	36
20	216	45
Past hazard exposure (<i>N</i> = 498)		
Concrete dust/milling	378	76
Heat stress	368	74
Welding fumes	359	72
Asphalt fumes	308	62
Solvents	286	57
Silica	276	55
Asbestos	250	50
Lead/lead paint	199	40
Benzene	193	39
Other	55	11
Ever used respiratory protection for a job? (<i>N</i> =482)	309	64
Type of self-reported health comorbidity		
Hypertension (<i>N</i> = 475)	122	26

	N	%
Arthritis (<i>N</i> =466)	87	19
Lung (<i>N</i> =472)	39	8
Diabetes (<i>N</i> =470)	32	7
Heart (<i>N</i> =476)	26	6
Cancer (<i>N</i> =477)	24	5
Stroke (<i>N</i> =464)	8	2
Other (<i>N</i> =470)	28	6
Significant depressive symptoms on CES-D (<i>N</i> = 470) (population about 10%)	220	47

Note. CES-D = Center for Epidemiologic Studies Depression Scale.

Table 2**Health Behaviors by Age Group (*N*=476)**

	<i>Younger</i>	<i>Older</i>	
	<i>N</i> (%)	<i>N</i> (%)	<i>P</i>
Tobacco use status (<i>N</i> = 468)			NS
Current	112(46)	84 (38)	
Quit within the past Year	17(7)	7(3)	
Quit more than 1 year ago	31 (13)	58 (26)	
Never used tobacco products	84 (34)	75 (33)	
Tobacco products used in the past month (<i>N</i> =476)			
Cigarettes	72 (29)	59 (26)	NS
Snuff/chewing tobacco	46(19)	20 (9)	< .05
Cigars	8(3)	13(6)	NS
Cigarillos	2(1)	1 (0.4)	NS
Pipe	0	0	NS
Are you thinking of quitting smoking? (<i>N</i> =200)			NS
Yes, within 30 days	24(21)	28 (33)	
Yes, within 6 months	58 (50)	29 (35)	
No	34 (29)	27 (32)	
Drinking status (<i>N</i> = 462)			< .05
Currently drink Alcohol	201 (85)	169(75)	
Quit drinking in the past year	10(4)	9(4)	
Quit drinking more than 1 year ago	19(8)	34(15)	
Never drank alcohol	8(3)	12(6)	
Alcohol problem (AUDIT 8 and drank in past 1 year, <i>N</i> =461)	87 (36)	60 (27)	< .05
Servings of fruit (not counting juices) (<i>N</i> =471)			< .05
None/less than 1 per Month	21 (8)	9(4)	
1–3 per month	36(15)	30(14)	
1 per week	32(13)	12(5)	
2–4 per week	56 (23)	63 (28)	
5–6 per week	32(13)	23(10)	
1 per day	45(18)	49 (22)	
2–3 per day	23(9)	34(15)	
4–5 per day	1(1)	5(2)	
Servings of vegetables (not counting salad or potatoes) (<i>N</i> =471)			< .05
None/less than 1 per Month	11(4)	3(2)	
1–3 per month	24(10)	12(5)	
1 per week	17(7)	14(6)	
2–4 per week	64 (26)	56 (25)	
5–6 per week	42(17)	48(21)	
1 per day	52(21)	48(21)	
2–3 per day	32(13)	38(17)	

	<i>Younger</i>	<i>Older</i>	
	<i>N(%)</i>	<i>N(%)</i>	<i>P</i>
4–5 per day	2(1)	4(2)	
6 or more per day	2(1)	2(1)	
How often do you eat deep fried food? (<i>N</i> =471)			NS
Never	8(3)	13(6)	
Less than once per Week	52(21)	56 (25)	
Once per week	78 (32)	56 (25)	
2–4 times per week	88 (36)	81 (36)	
5–6 times per week	12(5)	13(6)	
Daily	8(3)	6(2)	
Weight (<i>N</i> =471)			NS
Obese (BMI ≥ 30)	111 (45)	99 (44)	
Overweight (BMI 25–29.9)	92 (37)	96 (42)	
Normal (BMI 18.5– 24.9)	41 (17)	30(13)	
Underweight (BMI < 18.5)	1(1)	1 0)	
Mean (<i>SD</i>) MOS SLEEP score (<i>N</i> =470)	69.4 (17.7)	71.5 (16.7)	NS
Median (interquartile range) physical activity score (<i>N</i> = 458)	41.8 (38.8– 46.0)	42.0 (38.3– 45.4)	NS
In an average summer, how many times do you get a sunburn? (<i>N</i> = 474)			NS
0	34(14)	30(13)	
1	90 (37)	86 (38)	
2	64 (26)	63 (28)	
3 or more	58 (23)	49(21)	
How often do you use sun block? (<i>N</i> = 472)			NS
Never	88 (36)	89 (40)	
Some of the time	97 (39)	84 (37)	
About half of the time	27(11)	25(11)	
Most of the time/ always	34(14)	28(12)	

Note. NS = not significant; AUDIT = Alcohol Use Disorders Identification Test; BMI = body mass index; MOS = Medical Outcomes Study.

Table 3Interest in Receiving Health Services (*N* = 498)

	n	%
Would you be interested in receiving health services for any of the following?		
Quitting smoking, for those who used tobacco in the past month (<i>N</i> = 194)	110	57
Quitting alcohol, for those with an alcohol problem (<i>N</i> = 133)	26	20
Nutrition counseling (<i>N</i> = 433)	184	43
Exercise counseling (<i>N</i> = 424)	188	44
Help for sleep problems (<i>N</i> = 422)	143	34
Sun protection guidance (<i>N</i> = 422)	96	23
Mental health counseling, for those who have depressive symptoms (<i>N</i> = 185)	44	24