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DECISION LATITUDE, SELF-DETERMINATION, AND PARTICIPATION IN WORKPLACE HEALTH PROMOTION PROGRAMS

by

Nancy Christine Zuck 

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Science

Centre For Health Promotion Studies

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Abstract

Self-determination theory (Deci & Ryan, 1985) and Karaseks's workplace Demand and Control model (Karasek & Theorell, 1991) both suggest that controlling social environments can have a negative impact on health behaviours and on the 'uptake' of health promotion programming in the workplace. This study examined relationships between self-determination (decision latitude on the job, social influence from family, friends, and co-workers), health behaviors (physical activity, alcohol use, smoking), and participation in workplace health promotion programs. A total of 347 employees of a municipal government completed a questionnaire assessing these variables. Results showed positive relationships between social network support for health behavior choices and both decision latitude on the job and physical activity levels. Self- determination variables were unrelated to alcohol problems, smoking behavior, and past-year participation rates in workplace health promotion initiatives. However, females, younger employees and those with lower scores on a measure of problem alcohol use reported more willingness than other respondents to participate in workplace health promotion programs. Finally, contrary to predictions, social network pressures to get help for health behavior change (decreased self-determination) was associated with increased willingness to participate in workplace health promotion programs. Implications for theory and health promotion programming are discussed, along with limitations of the study.

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled DECISION LATITUDE, SELF-DETERMINATION, AND PARTICIPATION IN WORKPLACE HEALTH PROMOTION PROGRAMS submitted by Nancy Christine Zuck in partial fulfillment of the requirements for the degree of Master of Science.

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Chapter 1

Introduction and Literature Review

The Ottawa Charter for Health Promotion (World Health Organization, 1986) serves as the guidepost for health promotion around the world (Hamilton & Bhatti, 1996). The Charter recognizes that access to the prerequisites of health cannot be ensured by the health sector alone and requires action by all concerned: governments, health and other social and economic sectors, non-governmental and voluntary organizations, local authorities, industry, and the media.

One influential framework for understanding the full range of health determinants has been outlined by Evans and Stoddart (1990). The population health model outlines a number of non-medical health determinants, including social factors (e.g., income and social support) and personal factors (e.g., gender and health behaviors). Within this broad population health framework, the workplace can be seen as both a determinant of health and as a setting for health promotion activities. Workplaces can determine health because they provide social environments that can promote stress and/ or provide coping opportunities. Workplaces are settings for health promotion activities because of established channels of communication among employees, existing support networks among co-workers, and opportunities to develop corporate norms of behavior (Shephard, 1996). Green and Kreuter (1991) reinforce the importance of the workplace as a potentially important setting for health promotion as follows:

> "Worksites are to many adults what schools are to children and youth- places where most of the day light hours are spent, where friendships are made, where rewards that make one feel worthy are dealt and where one can be reinforced by peers and significant figures that impact work" (pp.308-309).

Because the majority of adult life is spent at work, Shephard (1996) proposed that the workplace can be an effective setting for improving the health of employees because of the potential for large organizations to promote policies promoting health (e.g., bans on smoking at the workplace), by providing social support for healthy behaviour among co-workers, and by using a variety of interventions to promote health (e.g., use of internal corporate communications to target health issues; provision of individually- based interventions through EAPs). Thus, workplace health professionals have a number of different strategies available to improve the health of the employees, and this setting allows for multi-dimensional approaches to target the improvement of employee health.

The majority of the workplace wellness programs have been behavioral in nature. For example, organizations typically offer health education programs to try to improve cardiovascular health, nutrition, exercise, and smoking cessation attempts of the employees, all with the ultimate goal of decreasing the cost that poor health habits have on organizations in terms of absenteeism, health claims, injury and illness (Pelletier, 1999). Although valuable, these programs usually do not take into consideration factors such as social and organizational culture and personal control of one's job to understand when and why employees participate in health promotion programs offered by the employer. Therefore, the goal of this study is to determine whether variables associated with *self-determination* (e.g., decision latitude on the job, social network pressures to adopt healthy behavior) affect participation rates in workplace health promotion programs and health behaviors outside of the workplace. As well, we will examine several other relevant variables (e.g., job stress and physical symptoms) to determine whether they also affect the relationship between self-determination and participation in

health promoting behaviors. The following sections provide a rationale for studying these factors. First, the concept of empowerment in health promotion will be reviewed and linked to the concept of personal control and to psychological theories of self-determination (Deci & Ryan, 1985). Next, Karasek's (1990) demand and control model in the workplace will be reviewed. These sections will be used to derive a series of hypotheses. Finally, proposed research methods will be discussed to test these predictions.

Empowerment in Health Promotion

Workplace wellness programs typically use educational approaches to modify employees' health behaviors. That is, health professionals offer health education programs to try to improve nutrition, exercise, and smoking cessation attempts of employees, with the ultimate goal of decreasing the cost that these poor health habits have on the organization in terms of absenteeism, health claims, injury and illness (Pelletier, 1999). The goal of most of these programs is to maintain employees in a 'disease-free state' (Labonte 1993). Although workplace health promotion programs, especially in the United States, tend to focus on educational interventions targeting behavior, they can be criticized because they have not taken into consideration many foundational concepts of health promotion, including the concept of empowerment. The Ottawa Charter for Health Promotion (1986) identifies the following five strategies as guides for areas to be addressed when trying to impact health: a) create supportive environments; b) strengthen community action; c) develop personal skills; d) build healthy public policy; and e) reorient health services. In addition to the Ottawa Charter for Health Promotion (WHO, 1986), the health promotion field recognizes that health

status may be impacted directly or indirectly through health determinants defined in psychological, social, environmental and political terms (Labonte, 1993). Workplace programs typically use the strategy of developing personal coping skills, without considering the impact that the social environment has on individuals making behavior changes. Of particular interest in this study is the concept of *empowerment*. Empowerment has been described as the capacity to define, analyze and act upon problems in one's life and living conditions (Labonte, 1993). Labonte (1993, p.51) suggests "empowerment exists as a shifting or as a dynamic quality of power relations between two or more people, so that the relationship tends towards equity (fairness) by reducing inequities in access to the instrument of power."

To fully understand the concept of empowerment, it is necessary to examine the concepts of power and powerlessness. Lord (1994) defines power as the capacity of persons, groups, or organizations to produce intended, foreseen, and unforeseen effects on others, and powerlessness as expectations of a person that his or her own actions will be ineffective at influencing the outcome of life events. Lerner (1986) made another important distinction between real and surplus powerlessness. Real powerlessness is described as powerlessness resulting from economic inequities and oppressive control exercised by systems and other people. Surplus powerlessness is an internal belief that change will not occur, resulting in an apathy and unwillingness to struggle for more control and influence.

Personal Control and Empowerment

There is a substantial body of research demonstrating that stress contributes to poor health and that stressors are inversely related to social status (for a review, see

Thoits, 1995). An important contribution to this literature is research showing that sense of control buffers people from the effects of stressors to promote psychological and physical health (Rodin, 1986). Perceived control over personal circumstances is also inversely distributed by social status (Thoits, 1995). Thus, individuals with lower income and education levels, females, minority groups and unmarried persons exhibit a lower sense of personal control and consequently lower health status (Turner & Roszell, 1994). Lachman and Weaver (1998) examined sense of control as a moderator of social class differences in health and wellbeing. They found that at all income levels, having higher mastery was associated with lower depressive symptom scores and that the level of depressive symptoms among lower income participants with high mastery was similar to depressive symptoms among higher income groups. In addition to depressive symptoms Lachman and Weaver (1998) found that high mastery and low perceived constraints were associated with better self-rated health at all income levels. This study suggests that a differential sense of control among different social status groups may provide insight into the gradient associated with health and social status. Why should people who have a greater sense of control be more likely to engage in health promoting behaviors? Rodin (1986) suggests that this is because those individuals with a greater sense of control believe that what they do makes a difference, which may lead to healthier behaviour.

Empowerment is viewed as a major component of health promotion, but this construct has not yet been linked to the literature on stress, personal control, and health. To address this gap, we propose that there is a natural link between personal control and the process of empowerment. It is proposed that believing that one can make a difference increases the likelihood of taking control over and improving one's health. It is

necessary for individuals to increase control over their lives and living conditions in order to be empowered and for empowerment as a process to take place. However, in the workplace, few practitioners target the concept of empowerment (and hence, the concept of personal control as a stress buffer) in interventions designed to influence health and participation in health promotion programs. In the next sections, two key theories will be reviewed with an eye toward understanding the personal, social and workplace conditions that foster a sense of control and autonomy over one's behavior. I argue that these theories will provide a conceptual framework for understanding empowerment in relation to participation in workplace health promotion programs. Self-determination theory (Deci & Ryan, 1985) and Karasek's demand and control model (Karasek & Theorell, 1990) both suggest that controlling social environments can have a negative impact on health and on the effectiveness of health promotion programming in the workplace.

Self Determination Theory

Self- determination theory (SDT) provides a broad framework with which to understand how personal and social factors related to personal autonomy influence motivation for participation in workplace health promotion programs (Deci & Ryan, 1985). In this theory, individuals are self-determined when they experience that their behaviors reflect autonomous choices and personal values as opposed to powerful social forces. Self-determination can either be supported or hindered by environmental forces. An extensive body of research shows that when environments support personal autonomy and provide choice, people are intrinsically motivated, and approach activities with creativity, high self-regard, and a general sense of wellbeing (Deci & Ryan, 1985). On the other hand, when environments attempt to coerce or pressure, people are extrinsically

motivated and approach activities as routine obligations, with low self-regard and a lower sense of well-being (for reviews see Deci & Ryan, 1985; 1987).

Substantial literature has been written on the positive effects of self-determination. In comparison with controlled motivation, autonomous motivation is associated with more positive psychological outcomes, such as exploration, intrinsic interest, cognitive flexibility and experiential involvement (for reviews see Deci and Ryan, 1895, 1987; Koestner & Losier, 1996; Wild, Kuiken & Schopflocher, 1995). Glass and Singer (1972) and Miller (1980) reported that when people believe that they have or can gain control over aversive events in their environment they perform more effectively than when they believe they cannot. As well, lack of perceived control leads to more reported physical symptoms such as headaches (Pennebaker, Burnam, Schaeffer & Harper, 1997). Conversely, repeated lack of control over outcomes leads to helplessness, which decreases learning and performance. In the area of health, people reporting autonomous reasons for pursuing a weight loss program were more likely to attend the program, and exhibited better exercise patterns and greater weight loss at a 2-year follow up, compared to people reporting controlled reasons for participating (Williams, Grow, Freedman, Ryan & Deci, 1996). Similarly Williams, Rodin, Ryan, Grolnick and Deci (1998) reported that patients reporting autonomous reasons for taking their medication showed greater long term adherence than patients who reported controlled reasons for medication use. Additionally, self-determination promotes positive learning experiences for school-aged children (Flink, Boggiano & Barrett, 1990). Similar results, improved attendance and involvement, have been found in alcohol treatment programs when clients reported autonomous motivations for participating (Ryan, Plant, &O'Malley, 1995).

Concepts related to self-determination in the workplace, including the impact of management styles and organizational design, have also been investigated. Studies in this area confirm that self-determination has positive effects on employee satisfaction, quality of work life and organizational effectiveness (Deci, Connell & Ryan, 1989). These outcomes are important because economic pressures require that companies be as effective as possible in the delivery of services and employees' are an important contributor to this process. Research on self-determination in the workplace has established that management support for self-determination of their employees was strongly correlated with trust in the corporation's top management, satisfaction with their level of trust in the corporation, satisfaction with pay and benefits, and greater perception of job security (Deci, Connell & Ryan, 1989). Managers' orientations towards supporting workers' autonomy versus controlling their behavior was found to have a positive correlation with the interpersonal context of subordinates' work, effect on motivational relevant variable as well as on personal health (Deci & Ryan 1985). When managers were more controlling, subordinates tended to be less satisfied with their pay, fear for their jobs and had less trust in the organization (Deci, Connell & Ryan, 1989). As mentioned above, STD may provide insight into methods of increasing the autonomy of employees. Deci, Connell and Ryan (1989) found that an intervention focused on supporting subordinates' self-determination affected managers' orientations which had positive impacts on workers' autonomy, and self-determination, and job satisfaction.

Although empowerment is viewed as a major component of health promotion, this construct has not yet been linked to the literature on SDT. We propose that social conditions supporting self-determination may provide a framework to understand

empowerment. If so, there may be important links between self-determination in employees and a variety of health outcomes, including participation in workplace health promotion programs.

Karasek's Demand and Control Model

Karasek's Job Demand and Control (DC) model integrates concepts of personal autonomy and control with the impact that empowerment can have on both job performance and health, and is specifically targeted to the workplace. In its most simplistic form, the DC model proposes that employees with low control over their work activities are at increased health risk compared to employees with high control over their work. Karasek and Theorell (1990) reported that job strain – defined as job characteristics including high demand and low control - is positively related to increasing ambulatory blood pressure, risk of cardiovascular disease, anxiety, depression and demoralization, alcohol and prescription drug use, and increased susceptibility to a wide range of infectious diseases.

Job demands, stress and coping. The DC model proposes that "psychological strain and physiological strain result from the joint effects of the workload and the range of decision making freedom (discretion) available to the worker facing these demands" (Karasek & Theorell, 1990). Within this framework, two aspects of the job predict psychological strain: 1) level of psychological workload demands or "job demands," and 2) the degree of "decision latitude" or "job control." A composite score comprised of these two indicators ("job strain") is viewed as a measure of overall stress at work. Work is measured through perceived levels of workload and work pace. Decision Latitude is a

conceived as a form of control and has been defined as the combination of job decision-making authority and the opportunity to use and develop skills on the job (Schnall, 1998).

Wheaton (1996) refers to stressors as "conditions of threat, demands, or structural constraints that, by the very fact of their occurrence or existence, call into question the integrity of the organism (p. 32)." Therefore, workloads and demands on the job can be viewed as stressors that influence health behaviours and health status. Stressors have been linked to physical illness or medical treatment seeking through depression, anxiety or generalized distress (Thoits, 1995). Of concern is not only the direct impact that stressors at work can have on the individual but the "carry-over" effects of stressors. For example, Bolger and colleagues (1989) found that stresses at work spill over to increase stresses at home and vice versa, and that one spouse's spillovers affect the other spouse. Additionally, Wheaton (1990) examined the cross-role interactions between work and marital stressors and found that stressors in one role sometimes increase the negative psychological effects of stressors in other roles. It is important to understand that stressors in one domain may not remain there and may have an effect on other aspects of life. This is one reason that Wheaton (1996) criticizes Selyes' (1976) theory of stress and explains stress from an engineering perspective that emphasizes the impact that multiple stresses have on the integrity of the whole and slowly cause deterioration of the body until there is breakdown and disease.

Coping resources can be defined as social and/ or personal characteristics which people may draw upon when dealing with stressors (Pearlin & Schooler, 1978). Taylor and Aspinwall (1996) suggest that genetic, familial, and individual difference factors, as well as external resources and social support are important moderators of psychosocial

stress, beginning with the appraisal process and continuing through the course of the stressful event to influence and predict coping and its outcomes. Of particular interest is Taylor and Aspinwall's (1996) view that one's ability to exert control over a stressful situation can help people cope more effectively with stress. Perceived control is defined in the stress and coping literature "as the belief that one can determine one's own internal states and behavior and influence one's environments, and or bring about desired outcomes" (Taylor & Aspinwall, 1996). Coping efforts such as sense of control may be directed at the demands themselves (problem- focused strategies) or at the emotional reactions, which often accompany those demands (emotion- focused strategies; Thoits, 1995). It is believed that people high in perceived control are more likely to use active, problem focused coping responses (Thoits, 1995). There is a vast amount of literature that supports that sense of control or mastery both directly reduces psychological disturbance and physical illness and buffers the deleterious effects of stress exposure on physical and mental health (for reviews see Rodin, 1986 and Turner & Roszell, 1994).

The belief that one can control the stressful events in one's life has been related to emotional well-being, successful coping with a stressful event, good health, behavior change that may promote good health, and improved performance on cognitive tasks (Thompson & Spacapan, 1991). This provides support for the impact that self-determination may have in the workplace. Essentially, self-determination on the job may buffer the impact of stresses on health because it allows for people to choose coping resources. Alternatively when self-determination is low, stress levels may increase as the person does not have the ability to choose or use effective coping resources to sufficiently deal with the stressors in the workplace.

Job Control. Decision latitude at work has been identified by Karasek and Theorell (1990) as the combination of job decision- making authority and the opportunity to use and develop skills. They propose that employees with the greatest amount of decision latitude at work will experience the least amount of stress. This is due to the fact that employees with high decision latitude and high work demands will have the ability to choose how to best cope with stressors at work. That new response, if effective, will be incorporated into his or her repertoire of coping strategies, that is it will be learned (Karasek & Theorell, 1990). The expanded range of solutions to environmental challenges raises the person's activity level and ability to cope in the future. Karasek and Theorell (1990) conclude that the employee who has successfully used their decision latitude to solve problems and stressors in the workplace will risk more and attain more, suggesting that motivation and self-efficacy is increased. This theory as described by Karasek and Theorell (1990) is very similar to that of SDT (Deci & Ryan, 1985) because both perspectives propose that control and autonomy in the workplace increase motivation, self-efficacy, learning, and health.

Demand and Control Model. The preceding two dimensions – job demands and job control can be crossed to yield four distinctively different kinds of psychological work experiences: active jobs, low strain jobs, high strain jobs and passive jobs (see Figure 1).

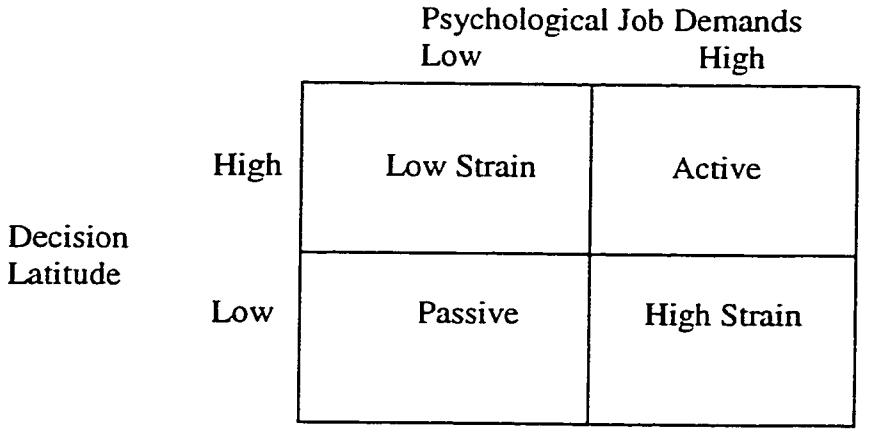

Figure 1. Karasek's psychological demand and control model

Active workers are defined as employees with high job demands and high levels of decision latitude. Karasek and Theorell (1990) propose that employees with these job characteristics will seek both of learning and growth opportunities due to increases in intrinsic motivation and self-efficacy. Low strain workers are identified as those with low demand and high decision latitude. The large amount of decision latitude granted to these employees allows for optimal responses to challenges, as the number of challenges they encounter is much lower than employees in active job.

Two types of workers are identified in the DC model as having higher health risks: (1) the high strain employee, and (2) the passive employee. High strain employees have low levels of decision latitude and high demand; passive employees have low demand and low decision latitude over their work. High strain jobs are associated with elevated adrenalin and cortisol, which are seen as markers of a stress reaction (Biondi & Picardi, 1999). People in such jobs experience distress, fatigue and prolonged recovery (recovery of neuroendocrine levels to baseline), and elevated blood pressure at work, at home and at sleep (Schnall & Landsbergis, 1994). In addition, high demands and low decision latitude on the job may cause a withdrawal from learning situations since high

strain employees are unable to make decisions or have the skills to deal with challenges in the workplace. Based on the DC model Karasek and Theorell (1990) explain that that low work demands and decision latitude on the job may lead the employees to adapt to low control and demand situations resulting in decreased self- efficacy, a reduced ability to solve problems or take on challenges leading or adapting to a feeling of 'learned helplessness'; similar to concept that Lord (1994) referred to in the empowerment literature as surplus powerlessness.

The work characteristics outlined in the DC model have not, to date, been associated with participation in workplace health promotion programs, yet there is a large amount of literature on the relationships between job characteristics and health behaviors such as smoking, alcohol use and physical activity. Results in this area are mixed. Smoking has been associated with job strain in some studies (Biener, 1987; Green & Johnson, 1990; Mensch & Kandel, 1988), but not in others (Reed, LaCroix, Karasek, Miller, & McLean, 1989; Pieper, LaCroix, & Karasek, 1989). Specifically, job demands have shown positive (Johansson, Johnson & Hall, 1991), null (Reed, et al., 1989; Pieper, LaCroix, & Karasek, 1989), and negative associations with smoking (Alterman, Shekelle, Vernon et al., 1994). Low job decision latitude has also shown positive (Alterman, Shekelle, Vernon et al., 1994; Pieper, LaCroix, & Karasek, 1989) and null associations (Johansson, Johnson & Hall, 1991; Reed, LaCroix, Karasek, Miller, & McLean, 1989) with smoking behavior.

Job strain has been associated with alcohol problems in some studies (Bromet, Dew, Parkinson, et al., 1988) but not in others (Alterman, Shekelle, Vernon et al., 1994). In studying the components of job strain it has been found that job demands have been

associated with alcohol use in men (Alterman, Shekelle, Vernon et al., 1994; Martin, Blum, Roman, 1992) but null results have also been reported (Reed, LaCroix, Karasek, Miller, & McLean, 1989; Cooper, Russell, & Frone, 1990). Low job decision latitude has been associated with alcohol use in men (Lennon, 1989; Greenberg & Grunberg, 1995) but not in others (Alterman, Shekelle, Vernon et al., 1994; Reed, LaCroix, Karasek, Miller, & McLean, 1989; Martin, Blum, Roman, 1992; Cooper, Russell, & Frone, 1990).

Non- work physical activity was not associated with job strain, job demands or latitude in one study (Reed, LaCroix, Karasek, Miller, & McLean, 1989). However another study found that sedentary behavior was associated with low latitude for men and women and high demands for women (Johansson, Johnson & Hall, 1991).

Goals of the Study and Hypotheses

Past literature on participation in workplace health promotion programs suggests that employees with higher health risk assessments are less likely to participate (Lewis, Huebner, & Yarborough, 1996) and that employees who are healthier and more concerned with fitness and health matters are more likely to participate (Conrad, 1987). The first goal of the proposed study is to replicate these findings. *Hypothesis 1* is that exercise, smoking and alcohol use will be associated with participation in workplace health promotion programs. The second goal of the proposed research is to fill a void in this literature regarding the relationship between self-determination constructs (e.g., personal autonomy, decision latitude on the job) and participation in workplace health promotion programs. *Hypothesis 2* is that greater levels of personal autonomy and decision latitude will be positively associated with participation in workplace health promotion programs. The third goal of the proposed research is to explore relationships

between variables taken from self-determination theory and variables from the DC model of workplace wellness. *Hypothesis 3* is that personal autonomy will be positively associated with decision latitude on the job. Finally, the fourth goal of the study is to determine whether self-determination variables and DC variables jointly predict involvement in health promoting behavior outside workplace health promotion programs. *Hypothesis 4* is that greater levels of personal autonomy and decision latitude will be positively associated with participation in health promoting behaviors outside the workplace.

Chapter 2

Methods

Sample and Study Setting

Employees working in a large municipal government in southern Alberta provided data for the study. Within this workplace, the Health, Safety and Wellness committee is composed of head consultants in the Human Resources department in the areas of health, safety and wellness. Over the past three years they have integrated these three components into the business plan for the organization. It is the committee's role to plan, develop implement and evaluate programs and services that increase the effectiveness of employees. Permission to conduct this study was obtained through the organizational Wellness Consultant. Background information on the study was provided to this individual, along with sample questionnaires and consent forms.

Measures

Employees received a survey consisting of a information sheet (see appendix 1), a second page providing information on filling out the survey items and asking for informed consent, and a series of 95 questionnaire items (see Appendix 2).

Demographics. A series of 6 items were used to assessed age, gender, marital status, education, personal income, and occupation. Age and gender were self-reported open-ended questions. Marital status was assessed in the following categories 1= single; 2= married; 3=divorced/ separated; 4=widowed; 5=other. Highest level of education was assessed using the following scale: 1= elementary school; 2=junior high school; 3=high school; 4= college degree; 5= undergraduate degree; 6= graduate degree. Current personal income was assessed (1= <20,000; 2= 21,000-30,000; 3= 31,000-40,000; 4=

41,000-50,00; 5= 51,000-60,000; 6= 61,000-70,000; 7= 71,000-80,000; 8= 81,000+). Job type was self-reported (1= administrative; 2= labourer/ foreman; 3=management; 4= professional; 5= technical).

Demand and Control Measures. The Job Content Questionnaire (JCQ) was developed by Robert Karasek (1979) and is based, in part, on questions drawn from the US Department of Labour/ University of Michigan Quality of Employment Surveys. It consists of 49 questions and generates a total of 9 dimensions including decision latitude, macro level decision authority, psychological job demands, physical work demands, job insecurity, job dissatisfaction, supervisor support, co-worker support and global competitive effects. Of those, only the skill discretion, decision authority, psychological work demands, job dissatisfaction and physical/psychological strain subscales were used in the study. Skill discretion refers to opportunity to use and develop skills (e.g., "My job requires that I learn new things"). Decision authority refers to the ability to make decisions in the workplace (e.g., "I have a lot of say about what happens on my job"). Psychological work demands refer to workloads and time provided to complete a job (e.g., "I have enough time to get the job done."). Physical and psychosomatic strain refers to the physical impacts that strain may have on the body (e.g., "Do you have trouble with poor appetite?"). Lastly, issues pertaining to enjoyment and satisfaction were used to assess job dissatisfaction (e.g., "Would you advise a friend to take this job?"). Internal consistency for these subscales was adequate in a previous study (i.e., Cronbach's alphas = .79, .71, .68, .59 for the skill discretion, decision authority, long measure of psychological demands, and short measure of psychological demands

subscales, respectively; see Karasek, Brisson, Kawakami, Houtman, Bonger and Amick, 1998).

Participation in Workplace Health Promotion. A brief checklist of workplace wellness programs offered by the organization was provided. These programs included an Active Living Pass, which provides financial support and payment alternatives for employees who use organizational owned pools, fitness and leisure centres. The Lunch and Learn program consists of lunch hour workshops covering a wide range of subjects based on the interests expressed by employees. A Stress Menu program provides employees with numerous options and courses in stress management. Corporate Challenge is a multi-sport competition that allows employees to participate 20 or more activities against other corporations. The activities include individual activities, team pursuits, and fun recreational and social events. The Employee Family Assistance Program (EFAP) is a combination of work, family and personal problem – resolution service to employees, families, supervisors/ managers, and union representatives. The Critical Incidence Program is a 24- hour, 7- day per week program that provides emotional support to highly traumatized employees (e.g., reactions to a suicide, death of employee, major worksite accident). Lastly a program entitled 'Increasing your Human Effectiveness' was included in the checklist. This program is designed to help employees develop a proactive and positive approach to their life and for optimizing their personal effectiveness and resilience to changing circumstances. Participants were asked to self-report participation in any activities within the last year (1=yes; 0=no) in addition to their willingness to participate in the upcoming year (1= very unwilling; 2= unwilling; 3= don't know; 4= willing; 5= very willing).

Physical Activity. The Godin Leisure- Time Exercise Questionnaire was used to measure each employee's participation in physical activity (Godin & Shephard, 1985). The measure asks four questions pertaining to leisure time activity. The first three questions required respondents to consider a 7-day period and self-report how many times on average they participated in more than 15 minutes of strenuous, moderate and mild exercise in their spare time. Definitions of strenuous, moderate and mild exercise were provided for participants. Weekly frequencies of strenuous, moderate and light activities are multiplied by nine, five and three metabolic equivalents (METs), respectively to measure total activity. The final question asked respondents to consider a 7-day period and report how often they work up a sweat (heart beats rapidly; 1=often, 2=sometimes, 3=never/rarely).

Alcohol Use Disorders Identification Test (AUDIT). The AUDIT is a standardized measure developed by the World Health Organization (Allen, Litten, Fortig & Babor, 1997; Conigrave, Saunders, & Reznik, 1995; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) and is used to assess problem drinking status. The AUDIT includes three items assessing the frequency and amount of alcohol consumption, three items assessing alcohol dependence (e.g., inability to stop drinking once started), and four items assessing problems caused by alcohol use (e.g., injuries).

Smoking. A series of six items previously used in a Provincial survey (Anglin, 1995) were used to assess smoking behavior. Employees were asked (1) if they have ever smoked cigarettes (0=no; 1=yes), (2) if they presently smoke (0=no; 1=yes), (3) how long ago it was that they last smoked (1=less than one month; 2= one to six months; 3= seven to eleven months; 4= one to five years; 5=more than five years), (4) how soon after

waking do you smoke your first cigarette (1=I don't smoke; 2= after 60 minutes; 3= 31-60 minutes; 4= 6-30 minutes; 5= within five minutes), (5) how many whole cigarettes do you usually smoke in an average day, (6) have you ever tried to quit smoking (0=no; 1=yes), and lastly (6a) if yes how many times.

Personal Autonomy Measures. Self-determination was assessed using an adaptation of a sociological measure to measure social network pressures and support for autonomy in relation to health behaviour (Burt, 1984; Wild, Hinson, Cunningham & Bacchiochi, in press). Respondents were asked to think about the family member they feel closest to, the friend outside of the workplace they feel closest to, and the friend inside of the workplace they feel closest to. For each interpersonal target, 5 variables were measured: (1) whether or not that individual has talked to the respondent about a health behavior (0=no; 1=yes); (2) frequency with which that individual has pressured them to change one or more health behaviors (e.g., smoking, alcohol use, exercise; 1= no pressure, 5= a lot of pressure), (3) frequency with which that individual pressured them to get help with one or more health behaviors (1= no pressure, 5= a lot of pressure), (4) frequency with which that individual would support their choices about whether or not to change their health behavior (1=no support, 5= a lot of support), and (5) frequency with which that person supports their choices about whether or not they should get help changing health behaviors.

Procedure

The Corporate Wellness Consultant, with the help of the researcher, approached four department heads to assess their interest in participating in the study. The departments included one section of an engineering department, an information

technology department, a human resources department and a parks and recreation department. After organizational approval was granted, a total of 1500 surveys were administered through the workplace internal mail system to key contacts in each work unit within the four departments. Each key contact distributed the surveys to employees' personal mailboxes. Surveys were completed and returned through the internal mail system, with the option of sending directly to the researcher. The completed questionnaires remained in the internal mailbox until the researcher came to retrieve them. A follow up letter was sent, through the internal email system to employees who received a copy of the survey, three weeks after the surveys were initially sent out to the key contacts in each of the different departments.

Chapter 3

Analysis and Results

Response Rate

Of the 1500 surveys mailed out, a total of 23% (N=347) were returned. They were returned through both internal mail and Canada Post. Ten days after the surveys were distributed to the key contacts, 247 surveys were returned. Thirty days after the initial mail out of the surveys a reminder letter was sent to employees through the internal electronic mail system. This lead to surveys being sent out to employees who replied to the email who claimed they initially had not received the survey. Three days after the reminder letter was sent to employees an additional 80 surveys were collected and 17 days after the reminder letter the final 30 surveys were collected.

Description of the Sample

Table 1 provides a descriptive summary of the sample (N=347). A total of 60.5% of the respondents were female and 37.2% were male. This is in sharp contrast to 1999 data obtained from the overall workplace that indicated 68.9% of employees were male and 31.2% were female. The average age of respondents was 41.1 (SD= 9.1). The youngest respondent was 21 years of age and the oldest 62 years of age. The respondents represented a number of different job types, self-classifying themselves as working in professional roles (31.1%), administrative / clerical positions (27.7%) management (14.4%), labourers (10.7%) and technical positions (10.4%). A total of 67.1% of respondents reported earning an income between $31,000 and $60,000 per year. Sixty-four percent of the sample indicated that they were married, 18.7% were single, 11.2% divorced, 0.9% widowed and 4.3% classified themselves in the other category. This

included common law couples, those engaged or those in same sex relationships.

Seventy- two percent of the respondents had achieved a college degree or higher.

Table 1

Description of Sample

Variable	Total Sample (N=347)	Males (n=129)	Females (n=210)
Sex			
Male	129 (37.2%)	N/A	N/A
Female	210 (60.5%)		
Age	M 41.1 SD 9.1	M 42.6 SD 9.1	M 40.1 SD 8.9
Marital Status			
Single	65 (18.7%)	25 (19.4%)	40 (19.0%)
Married	224 (64.6%)	90 (69.8%)	127 (60.5%)
Divorced	39 (11.2%)	10 (7.8%)	28 (13.3%)
Widowed	3 (0.9%)	0 (0.0%)	3 (1.4%)
Other	15 (4.3%)	4 (3.1%)	11(5.2%)
Education			
Elementary	0 (0.0%)	0 (0.0%)	0 (0.0%)
Jr. High	1 (0.3%)	0 (0.0%)	1 (0.5%)
Sr. High	90 (25.9%)	28 (21.7%)	57 (27.1%)
College	105 (30.5%)	37 (28.7%)	66 (31.4%)
Undergraduate	106 (30.5%)	47 (36.4%)	58 (27.6%)
Graduate	44 (12.7%)	16 (12.4%)	28 (13.3%)
Income			
21,000-30,000	19 (5.5%)	2 (1.6%)	17 (8.1%)
31,000-40,000	37 (10.7%)	8 (6.2%)	29 (13.8%)
41,000-50,000	94 (27.1%)	39 (30.2%)	52 (24.8%)
51,000-60,000	41 (11.7%)	21 (16.3%)	19 (9.0%)
61,000-70,000	34 (9.8%)	18 (14.0%)	16 (7.6%)
71,000-80,000	15 (4.3%)	12 (9.3%)	3 (1.4%)
81,000+	6 (1.7%)	6 (4.7%)	0 (0.0%)

Job Type			
Administrative/ clerical	95 (27.7%)	14 10.9%)	79 (37.6%)
Labourer	37 (10.7%)	20 (15.5%)	16 (7.6%)
Management	50 (14.4%)	32 (24.8%)	16 (7.6%)
Professional	108 (31.1%)	34 (26.4%)	73 (34.8%)
Technical	36 (10.4%)	24 (18.6%)	11 (5.2%)

Participation in Workplace Health Promotion Programs

As shown in Table 2, participation in workplace health promotion programs varied between 4.6% of respondents participating in the Stress Menu Program to 23.9% of the sample participating in the Lunch and Learn Program. The Active Living Pass had an equal number of male and female participants, and 23.3% of the male respondents and 24.3% of the female respondents participated in Lunch and Learn program. Similarly, 16.3% of male respondents and 15.7% of female respondents participated or reported using the Employee Family Assistance Program (EFAP). A larger percentage of male respondents reported participating in the Active Living Pass (16.3% vs. 10.0%) and the 'Increasing Your Human Effectiveness' program compared to female respondents (17.8% and 13.8%, respectively).

Table 2

Participation Rates in Workplace Health Promotion Programs, 1999

Program	Participated In 1999 (N=347)	Male Participation in 1999 (n=129)	Female Participation in 1999 (n=210)
ALP	44 (12.2%)	21 (16.3%)	21 (10.0%)
LL	83 (23.9%)	30 (23.3%)	51 (24.3%)
SM	16 (4.6%)	4 (3.1%)	10 (4.8%)
IHE	55 (15.9%)	23 (17.8%)	29 (13.8%)
CC	61 (17.6%)	28 (21.7%)	31 (14.8%)
CI	23 (6.6%)	11 (8.5%)	10 (4.8%)
EFAP	54 (15.6%)	21 (16.3%)	33 (15.7%)

Note. ALP= Active Living Pass, LL= Lunch and Learn, SM= Stress Menu, IHE= Increasing your Human Effectiveness, CC= Corporate Challenge, CI= Critical Incidence, EFAP= Employee Family Assistance Program.

Description of Predictor Variables

Job content scales. Recall that only the following subscales from the JCQ were used: skill discretion, decision authority; decision latitude (the subtotal of skill discretion and decision authority); a long and short version of job demands; job dissatisfaction; and strain. Means and standard deviations for these variables are presented in Table 3. Exploratory analysis evaluated the JCQ variable in relation to job type. One-way ANOVA revealed that there was a significant difference across job types in the means for skill discretion, decision authority, decision latitude, the long measure of demands and the short measure of demands and job dissatisfaction across job types. (Fs = 28.85, 14.58, 24.70, 9.13, 8.44, and 3.81, respectively). Specifically, administrative/ clerical and labourer jobs were associated with lower levels of skill discretion and decision authority. Interestingly, there were no differences in strain across job types.

Table 3

Description of Means of Job Content Questionnaire (JCQ) Variables

JCQ Subscales	Total M	Total SD	Administration	Labourer	Management	Professional	Technical	F
Skill Discretion	36.10	5.87	32.51_{a}	33.95_{a}	38.74_{c}	39.32_{c}	36.23_{b}	28.85***
Decision Authority	35.71	7.11	32.63_{a}	33.89_{a}	38.53_{b}	38.77_{b}	34.78_{a}	14.58***
Decision Latitude	71.86	12.03	65.14_{a}	67.83_{ab}	77.25_{c}	78.19_{c}	71.31_{b}	24.70***
Job Demands (long)	10.23	4.01	9.32_{a}	8.20_{a}	11.96_{b}	11.30_{b}	9.74_{a}	9.13***
Job Demands (short)	33.36	5.95	31.96_{a}	30.67_{a}	36.06_{b}	34.95_{b}	32.75_{a}	8.44***
Job Dissatisfaction	8.42	2.38	8.94_{ab}	8.50_{ab}	8.00_{ab}	7.90_{a}	9.14_{b}	3.81**
Physical/ Psychosocial Strain	8.54	2.44	8.44	8.73	8.52	8.59	8.56	0.11

Note. JCQ variables compared across rows. Means with different subscripts are significantly different at $p < .05$ using Newman-Keuls comparisons.

*** $p < .001$., ** $p < .01$.

Godin Leisure-Time Exercise Questionnaire. Table 4 provides descriptive information about the exercise scale used in the survey. Of the sample (N=347), 35.4%, 40.1% and 23.9% reported that in a 7-day period they are active enough to work up a sweat often, sometimes and never/ rarely respectively.

Table 4

Description of Exercise Behaviors

	Frequency per week (M)	(SD)	Total Sample METS (M)	(SD)	Males METS (n=129)		Females METS (n=210)	
Strenuous activities	1.70	1.92	15.23	17.29	17.02	18.97	14.15	16.28
Moderate activities	2.88	2.73	14.37	13.67	14.29	13.58	14.54	13.82
Light activities	3.26	3.11	9.77	9.33	11.16	11.39	8.81	7.72
Total leisure time activity	1.88	.77	39.30	27.91	42.36	31.23	37.41	25.76
Weekly leisure time activity								
Often			123	(35.4%)	43	(33.3%)	78	(37.1%)
Sometimes			139	(40.1%)	52	(40.3%)	33	(25.6%)
Never/ rarely			83	(23.9%)	33	(25.6%)	50	(23.8%)

AUDIT Scale. Table 5 represents the information on the Audit scale and identifies a mean for the total sample of 3.09 (SD= 2.62). Twenty-three people (6.6%) were identified with the AUDIT as having a alcohol problem, 12 male and 9 female, using the suggested AUDIT cutoff score of 8 or greater (Allen et al., 1997). Almost twice as many male respondents met the cut off for problem drinking (9.3%) compared to female respondents (4.3%).

Table 5

Description of Alcohol Behaviors

	Total Sample (M) (SD)	Males (n=129)	Females (n=210)
Alcohol Use			
Audit Score	3.09 (2.62)	3.74 (3.05)	2.57 (2.09)
Score >8	23 (6.6%)	12 (9.3%)	9 (4.3%)
Score <8	324 (93.4%)	117 (90.7%)	201 (95.7%)

Smoking Behaviors. Table 6 describes the frequencies of smoking behaviors as well as the means and standard deviations of number of full cigarettes consumed in a day (M= 13.10; SD= 7.18) and the number of times the respondents have tried to quit (M= 3.84; SD= 10.4).

Table 6

Description of Smoking Behaviors

	Total Sample	Males (n=129)	Females (n=210)
Smoking			
Ever smoked	216 (62.2%) Y	80 (62.0%)	129 (61.4%)
	128 (36.9%) N	48 (37.2%)	79 (37.6%)
Current smoker	63 (18.2%) Y	22 (17.1%)	37 (17.6%)
	282 (81.3%) N	107 (82.9%)	171 (81.4%)
Last smoke			
< month	40 (11.5%)	11 (8.5%)	26 (12.4%)
1-6 months	13 (3.7%)	4 (3.1%)	3.8 (5.3%)
7-11 months	6 (1.7%)	2 (1.6%)	4 (1.9%)
1-5 years	25 (7.2%)	16 (12.4%)	9 (4.3%)
+ 5 years	123 (35.4%)	44 (34.1%)	76 (36.2%)
missing/N/A	55 (15.9%)	52 (40.3%)	86 (41.5%)
Wake			
>60 min	16 (4.6%)	3 (2.3%)	11 (5.2%)
31-60 min	9 (2.6%)	3 (2.3%)	6 (2.9%)
6-30 min	16 (4.6%)	5 (3.9%)	10 (4.8%)

< 5min	5 (1.4%)	2 (1.6%)	3 (1.4%)
don't smoke	282 (81.3%)	116 (89.9%)	180 (85.7%)
# per day			
	13.10 (M)	14.92	12.13
	7.18 (SD)	8.17	6.91
# times quit			
	3.84 (M)	4.88	3.42
	10.4 (SD)	10.32	10.72

Personal Autonomy Variables Table 7 presents the self-determination variables from the social network measures. Recall that we asked respondents to think about the health behaviors previously identified in the survey and assess how much each interpersonal target (a) pressured the respondent to change health behaviors (1=no pressure... 5= a lot of pressure), (b) pressured the respondent to get help with changing health behaviors (1=no pressure... 5= a lot of pressure), and (c) supported the respondent in making decisions about changing health behaviors (1= no support...5= a lot of support). Of the total sample (N=347) 56.8% had family members talk to them about their health behaviors, 42.4% had a friend outside of work and 35.4% had a friend inside work talk to them about health behaviors.

Table 7

Description of Social Network/ Self-Determination Variables (N=347)

Variable	Family member	Friend outside workplace	Friend inside workplace
Ever talked about health behaviors	197 (56.8%) Y 142 (40.9%) N	147 (42.4%) 182 (52.4%)	123(35.4%) 200 (57.6%)
Pressure to change health behaviors	1.67 (M) .99 (SD)	1.47 (M) .94 (SD)	2.03 (M) 2.42 (SD)

Pressure to get help for health behaviors	1.40 (M) .88 (SD)	1.27 (M) .73 (SD)	1.14 (M) .49 (SD)
Support for change of health behaviors	4.40 (M) 1.09 (SD)	4.21 (M) 1.14 (SD)	3.92 (M) 1.26 (SD)

Hypothesis 1

Recall that Hypothesis 1 predicted that exercise, smoking and alcohol use will be associated with participation in workplace health promotion programs. Two outcome measures were available for testing this Hypothesis: (1) participation rates in the seven workplace health promotion programs in the year prior to the survey (coded as 1= participated; 2=no participation), and (2) willingness to participate in the 7 workplace programs in the upcoming year (coded as 1= very unwilling; 2= unwilling; 3= don't know; 4= willing; 5= very willing). Logistic regression analysis was used to test the Hypothesis for the dichotomous past-year participation measure, and multiple regression analysis was used to test the Hypothesis for the continuous measure of willingness to participate in the upcoming year.

In order to simplify the analyses, a total participation score was computed as (1=never participated in any of the 7 workplace health promotion programs in the past year; 2= participated in one or more of the 7 programs in the last year). Similarly, a total willingness to participate score was computed by summing the 1-5 ratings across each of the 7 workplace programs.

Each outcome measure was regressed onto 9 variables, including: age, sex, marital status (recoded as 1=single, divorced, separated, other; 2= married), education (recoded as 1= high school, or less; 2= college degree or higher), income, job type, exercise (total score on the Godin Leisure Time measure), alcohol use (total AUDIT

scores), and smoking status (coded as 1=not currently smoking; 2=current smoker). Socio-demographic variables were included in the regression analyses in order to take into account the broad population health determinants in addition to the primary behavioral variables of interest.

Results from the logistic regression analysis indicated that the nine demographic and fitness/ health variables did not significantly predict participation in one or more of the 7 workplace health promotion programs during the last year (Model χ^2=11.07, ns). However as Table 8 indicates, these variables did significantly predict willingness to participate in these 7 health promotion programs in the upcoming year (ΔR^2 = .07, F (9, 264) = 2.08, p< .03). Inspection of the beta weights for this analysis showed that willingness to participate in health promotion programs was inversely related to age and AUDIT scores (β = -.16 and -.13, p< .05). Further analysis examined willingness to participate in the upcoming year in individual health promotion programs. As Table 8 indicates, these variables did significantly predict participation in the Lunch and Learn, Stress Menu and Corporate Challenge programs (ΔR^2 = .10, F (9, 282) = 3.37, p< .001; ΔR^2 = .07, F (9, 277) = 2.27, p< .02; ΔR^2 = .08, F (9, 283) = 2.72, p< .01; respectively). Inspection of the beta weights for the analysis of the Lunch and Learn program showed that willingness to participate was positively related to respondent sex (female =1) (β = -.17, p< .01), and inversely related to AUDIT scores (β = -.21, p< .001). Inspection of the beta weights for the analysis of the Stress Menu program showed that willingness to participate was positively related to respondent sex (female =1) (β = -.17, p< .001) and inversely related to AUDIT scores (β = -.13, p< .05). Inspection of the beta weights for

Table 8

Relationship between Demographic Characteristics, Health/ Fitness Concerns, and Willingness to Participate in Workplace Health Promotion Programs.

Predictor	Willingness to Participate			Lunch and Learn			Stress Menu			Corporate Challenge		
	ΔR^2	F	β	ΔR^2	F	β	ΔR^2	F	β	ΔR^2	F	β
All Variables	.07	2.08*		.10	3.37***		0.07	2.27*		.08	2.72**	
Age			-.16*			-.08			-.08			-.22***
Respondent Sex			.09			.17**			.17***			-.01
Marital Status			-.02			-.02			-.06			-.09
Education			.03			.06			-.02			-.04
Income			-.03			-.00			.01			.05
Job Type			.09			.03			-.01			.06
Exercise			.01			.03			-.04			.09
AUDIT			-.13*			-.21***			-.13*			.03
Smoking			.04			.02			-.01			.02

Note.
***p< .001, ** p< .01* p< .05. Respondent sex was coded as male=1, female=2.

the analysis of the Corporate Challenge program showed that willingness to participate was inversely related to age ($\beta = -.22$, $p < .001$).

Hypothesis 2

Hypothesis 2 predicted that greater levels of personal autonomy and decision latitude on the job would be positively associated with participation in workplace health promotion programs. Two outcome measures were available for testing this Hypothesis: (1) participation rates in the 7 workplace health promotion programs in the year prior to the survey (coded as 1= participated; 2=no participation), and (2) willingness to participate in the 7 workplace programs in the upcoming year (coded as 1= very unwilling; 2= unwilling; 3= don't know; 4= willing; 5= very willing). Logistic regression analysis was used to test the Hypothesis for the dichotomous past-year participation measure, and multiple regression analysis was used to test the Hypothesis for the continuous measure of willingness to participate in the upcoming year.

In order to simplify the analyses, a total participation score was computed as (1=never participated in any of the 7 workplace health promotion programs in the past year; 2= participated in one or more of the 7 programs in the last year). Similarly, a total willingness to participate score was computed by summing the 1-5 ratings across each of the 7 workplace programs.

Each outcome measure was regressed onto 13 variables, including: age, sex, marital status (recoded as 1=single, divorced, separated, other; 2= married), education (recoded as 1= high school, or less; 2= college degree or higher), income, job type, the JCQ variables of: decision latitude, demands, job dissatisfaction, and strain, the

composite Social Network variables: pressure to change health behavior, pressure to get help to change health behavior, and support in health behaviors choices.

Results from the logistic regression analysis indicated that the twelve demographic, JCQ and Social Network variables did not significantly predict participation in one ore more of the 7 workplace health promotion programs during the last year (Model χ^2=8.84, ns). However as Table 9 indicates, these variables did significantly predict willingness to participate in the 7 health promotion programs in the upcoming year (ΔR^2 = .12, F (13, 248) = 2.51, p< .01). Inspection of the beta weights for this analysis showed that willingness to participate in health promotion programs was inversely related to age (β = -.12, p< .09) and positively related to pressure to get help for health behaviors (β = .17, p< .02). Further analysis examined willingness to participate in the upcoming year in individual health promotion programs. As Table 9 indicates, these variables did significantly predict participation in the Active Living Pass, Stress Menu, Corporate Challenge and Employee Family Assistance programs (ΔR^2 = .11, F (13, 265) = 2.47, p< .01; ΔR^2 = .13, F (13, 260) = 3.00, p< .001; ΔR^2 = .09, F (9, 265) = 2.10, p< .05 and ΔR^2 = .10, F (13, 262) = 2.14, p< .05; respectively). Inspection of the beta weights for the analysis of the Active Living Pass program showed that willingness to participate was inversely related to age (β = -.20, p< .01), and positively related to pressure to get help for health behaviors (β = -.16, p< .05). Inspection of the beta weights for the analysis of the Stress Menu program showed that willingness to participate was positively related sex and strain (β = -.20, p< .01, and β = .17, p< .01 respectively). Inspection of the beta weights for the analysis of the Corporate Challenge program

Table 9

Relationship between Demographic Characteristics, JCQ Variables, Social Network Variables and Willingness to Participate in Workplace Health Promotion Programs.

Predictor	Willingness to Participate			Active Living Pass			Stress Menu			Corporate Challenge			Employee Family Assistance Program		
	ΔR^2	F	β	ΔR^2	F	β	ΔR^2	F	β	ΔR^2	F	β	ΔR^2	F	β
All Variables	.12	2.51**		.11	2.47**		.13	3.00**		.09	2.10*		.10	2.14*	
Age			-.12			-.20**			-.03			-.22**			-.02
Respondent Sex			.09			-.07			.20**			-.04			.04
Marital Status			.01			.09			-.01			-.06			-.02
Education			-.00			.00			-.04			-.02			.10
Income			-.05			-.03			.00			.03			.01
Job Type			.09			.00			.01			.05			.13
Decision latitude			.10			.06			.09			.04			.05
Demands			-.02			.00			-.08			-.03			-.03
Dissatisfaction			.03			-.10			.06			.04			.01
Strain			.11			.10			.19**			-.04			.10
Pressure to change health behaviors			.07			.10			-.03			.17*			-.02
Pressure to get help for health behaviors			.17*			.16*			.17**			.02			.21***
Support for health behavior choices			-.07			-.05			-.08			.09			-.06

Note. ***p< .001, ** p< .01* p< .05. Respondent sex was coded as male=1, female=2.

showed that willingness to participate was inversely related to age ($\beta = -.22$, $p < .01$), and positively related to pressure to change health behaviors ($\beta = .17$, $p < .05$). Inspection of the beta weights for the analysis of the Employee Family Assistance Program showed that willingness to participate was positively related to pressure from friends and family members to get help to change health behaviors ($\beta = .21$, $p < .001$).

Hypothesis 3

Recall that Hypothesis 3 stated that personal autonomy would be positively associated with decision latitude on the job (job latitude being the summation of skill discretion and decision authority). The correlations computed for hypothesis 3 allowed for a comparison of relationships between social network variables taken from self-determination theory and job variables from the DC model. Decision latitude on the job was negatively correlated with social pressure to change health behaviors ($r = -.13$, $p < .05$) and social pressures to get help for health behaviors ($r = -.16$, $p < .01$).

Hypothesis 4

Hypothesis 4 stated that greater levels of personal autonomy and decision latitude would be positively associated with participation in health promoting behaviors outside of the workplace. Table 10 reveals that total leisure time activity ($r = .146$, $p < .001$) and strenuous activity ($r = .132$, $p < .05$) were positively correlated with support for health behavior choices. The personal autonomy and JCQ measures were unrelated to alcohol problems and smoking status.

Table 10

Relationship between Personal Autonomy Variables, Decision Latitude and Exercise, Smoking and Alcohol Variables

	Exercise					
	Total	Light	Moderate	Strenuous	Audit	Smoking
Self- Determination Variables						
Pressure to change health behaviors	-.076	-.052	-.020	-.085	-.011	-.019
Pressure to get help health behaviors	.009	.032	.095	.086	-.027	-.024
Support for health behaviors choices	.146**	.063	.075	.132*	.083	-.042
JCQ Variable						
Decision Latitude	.042	-.041	.026	.077	.103	-.004

Note. ** $p < .01$., * $p < .05$.

Chapter 4

Discussion

The Health, Work & Wellness Institute of Canada defines workplace wellness as:

> "...a way of doing business which includes effective communication, fairness, dynamic leadership, healthy corporate culture and work/ family policies. A well workplace makes decision latitude and personal growth of employees a priority. Workplace wellness can increase staff productivity and loyalty. Workplace wellness establishes a standard of excellence in the workplace and gives Canadian business a competitive edge in the world marketplace, with positive input to our society" (Health, Work and Wellness Institute of Canada, 2000)

This definition emphasizes the importance of the social, cultural and physical environment in determining health, and specifically how these environments interact to impact employee health, and productivity. This definition shows a shift from workplace wellness programs that are behavioral in nature to one that accounts for the environment in which the employees work and play. The purpose of this study was to assess whether variables associated with self-determination (e.g., decision latitude on the job, social network influences to adopt healthy behaviors) affect participation in workplace health promotion programs and health behaviors outside of the workplace. It was proposed that social conditions supporting self-determination and decision latitude on the job might provide a framework to understand empowerment and participation in workplace health promotion programs. These social conditions are consistent with basic principles of health promotion: empowering individuals to address both social and physical environments in achieving health.

Participation in Workplace Health Promotion Programs

In total 57% of the respondents (n=197) indicated participation in one or more of the workplace health promotion programs offered by the organization in the last year. In

a review of the literature Pelletier (1999) reminds the reader that participation rates are defined and operationalized in different ways in different sites and studies. Participation defined as the completion of a health risk assessment are as low as 9.5% and as high as 80%, and it has been noted that co-payment of programs (as is the case in the Active Living Pass) have an important impact on employees' decisions regarding participation. Conrad (1988) reports that participation in on-site programs ranges from 20-40% of employees and 10-20% for off-site programs.

Participation in the health promotion programs offered at the organization in the last year range from as low as 4.6% of respondents for the Stress Menu program to as high as 34% of respondents for the Lunch and Learn program. Men and women tended to participate at similar rates for all of the programs offered. Based on the participation rates of the respondents it is apparent that these rates are similar to those reported in by Pelletier (1999) and Conrad (1988). Due to the organizational structure of the study sample it is difficult to draw conclusions as to whether employees accessing program on-site were more likely to participate, and the impact of co-payment program (the Active Living Pass). Had location of employment been gathered in the survey further information could have concluded whether off-site programs had less participants than on-site programs.

There are many explanations for the participant rates observed in the study. Off-site locations for programs may decrease participation rates and the ability to recruit participants. The study setting has a number of satellite locations in addition to the organizational headquarters. Therefore it may be important to look at ways to either take programs to the employees who do not work at the central location, or find ways to meet

their needs. Additionally the organization may look to market the programs to employees who indicate more willingness to participate, younger employees and female employees.

Participation rates observed in the present study may also reflect preexisting health status and rates of health behaviors reported by the respondents. The present workplace sample was relatively well educated (72% had achieved a college degree or higher) and may have had higher income levels than the broader community. These factors (high education and income levels) may have led many respondents to not feel that corporate health promotion programs were of particular value for them.

Hypothesis 1

There was partial support for hypothesis one; that exercise, smoking and alcohol use will be associated with participation in workplace health promotion programs. Results indicated that respondents with higher scores on a problem drinking measure were less willing to participate in workplace health promotion programs in the upcoming year. This finding is similar to those found by Lewis et al. (1996) who found that employees with higher health risk assessments were less likely to participate in workplace health promotion programs. In addition to replicating this finding, younger respondents were more willing to participate in the upcoming year. Specifically younger respondents were more willing to participate in the Corporate Challenge, and female respondents and those with lower scores on problem drinking were more willing to participate in the Lunch and Learn and the Stress Menu. This may provide support for the fact that many organizations initially implement workplace health promotion programs as a method to recruit staff. This may be more important to younger or female staff when they are being recruited to work at the organization.

Hypothesis 2

Results from the study provided no support for hypothesis 2 that greater levels of personal autonomy and decision latitude on the job would be positively associated with participation in workplace health promotion programs. If anything, results indicated the opposite effect. Pressure to change or get help for health behaviors from family and friends (decreased self-determination) was associated with increased willingness to participate in workplace health promotion programs. These results are consistent with social control theories that argue that social networks serve regulatory or control functions (Durkheim, 1897/1951; Hughes & Gove, 1981). Although pressure to get help was shown to increase willingness to participate, research on self-determination theory has shown that the perception of personal autonomy increases the likelihood of adherence to weight loss, smoking cessation, and other health behavior programs (Williams, Grow, Freedman, Ryan & Deci, 1996). These results suggest that pressure from social networks may get employees to programs but also may impact adherence and ultimately behavior change.

Hypotheses 3 and 4

Results did indicate support for hypothesis 3 that there would be a positive relationship between self-determination measures and decision latitude on the job. Employees who reported less pressure and more support from friends and family to change health behaviors reported more decision latitude on the job. This finding may be similar to those found by Wheaton (1996) and Bolger et al. (1989) who found carry-over effects of stressors, stresses at work spill over to increase stresses at home and vice versa. In this study, greater autonomy support provided by friends and family was associated

with greater decision latitude on the job. Perhaps self- determination in relation to health behaviors carries over to self-determination at work (in the form of decision latitude). Autonomous motivation has been associated with more positive psychological outcomes such as exploration, intrinsic interest, cognitive flexibility and experimental involvement (for reviews see Deci and Ryan, 1895, 1987; Koestner & Losier, 1996; Wild, Kuiken & Schopflocher, 1995) and high decision latitude on the job has been associated with intrinsic motivation and self-efficacy (Karasek & Theorell, 1990). Thus indicating an expected link and support for hypothesis 3. Benefits to the organization include that employees with higher levels of autonomy will have more motivation at work and increased self-efficacy to take on new tasks, and be work efficiently (Deci, Connell & Ryan, 1989). In addition to support for the hypothesis, support was found for the work completed by Thoits (1995), that perceived control is inversely distributed by social status. Employees classified in administrative and labourer positions were found to have less decision latitude on the job than professional, technical or management positions.

Results provided some support for hypothesis 4 that personal autonomy and decision latitude would be positively associated with participation in health promotion behaviors outside of the workplace. Total leisure time activity and strenuous activity was positively associated with support for health behavior choices, which may show support for Williams et al. (1996) who found that people reporting autonomous reasons for pursuing a weight loss program exhibited better exercise patterns. There was no support for personal autonomy or decision latitude on the job impacting alcohol problems or smoking behavior.

Implications for Theory. The results of the study indicate that there was partial support for self-determination theory and no support for predictor variables of the DC model. The DC model was designed to predict strain and cardiovascular disease risk not participation in workplace health promotion programs. This model may provide support for the difference between the workplace as a determinant of health and a setting for health promotion. The findings suggest that decision latitude does not impact participation or health behaviors yet the literature suggests that decision latitude can have a negative impact on health status (Karasek & Theorell, 1990). It may therefore be important to address decision latitude in the workplace as it can be seen as a determinant of health, rather than be taken into consideration when developing programs. Based on the partial support found for self-determination theory further investigation into the relationships between self-determination theory and physical activity and decision latitude may be warranted.

Limitations of the Study

Several limitations should be considered in the interpretation of these findings. First is the sample setting. At the time of the administration of the survey the organization had just undergone a re-organization, thus potentially impacting the response rate, employees who chose to respond, and feeling pertaining to the psychological strain measures. Additionally, the sample may be biased in that the researcher was familiar with the setting and this could have caused a bias in those responding and potentially explain the large percentage of female respondents. Another explanation for this high female response rate may be that the departments surveyed have a larger portion of women employees in comparison to other departments. The

organization chosen for the study is a public organization and there is no way of knowing from the current study if this sample is similar to private workplaces, and whether the results of the study are generalizable to other workplaces in the city or province. Second, he method of responding to the survey may have reduced the response rate, as employees were asked to return completed surveys through the internal mail system, and many may have felt uncomfortable with this due to the sensitivity of some of the items in the survey. Options were available for employees to return the survey in a sealed envelope, and many used this option. Third, employees were asked to complete the survey in their own time outside of work, although we have no way of knowing if this did occur, the length of the survey may have impacted the response rate. The survey contained over 100 questions and took approximately 30 minutes to complete. Employees who have high demands on the job may not have been interested to take time out of their day to complete the survey. Fourth, the sample size was relatively small for the investigation; a larger sample size may have increased the ability to predict how self-determination variables impact participation in workplace health promotion programs. Fifth, participation did not take into account frequency or duration of the activity. It was possible to report participation in the Active Living Pass, yet not access fitness facilities to be physically active. This information may have had limited value, but since we did not see a relationship between exercise and the Active Living pass, it is possible. Sixth, the survey did not address demands outside of the workplace, which may play a role in participation, and support from their immediate supervisor, and how this person supports their personal autonomy.

Recommendations

Due to the limitations of the study, additional research in this area may be useful. If the study were to be repeated there are a number of additional measures that may be included. First, is a measure of culture in the organization, if the culture is perceived by employees as one that is not conducive to support the wellbeing of the employees this could impact participation in workplace health promotion programs. Although this study did assess dissatisfaction it did not assess the support of the organization (culture). Perhaps the social network variables could include a measure on the support of the organization. Second, the questionnaire should include a measure of self- reported health. Although the current questionnaire addressed issues pertaining to strain, one's perceived health status was not included, which may impact participation in the programs offered at the workplace. This would provide additional information as to whether the individual feels as though they are healthy. Third, the questionnaire should include a measure of management support. The research and self-determination in the workplace identified that personal autonomy has an impact on both employees and managers (Deci, Connell & Ryan, 1989; Deci & Ryan, 1985).

If the study were to be conducted again, increasing the sample size would help to predict the impact of the variables being investigated, in the current study, participation was as low as 16 people in some programs. This made it very challenging to predict the impact of the variables of interest. If the survey could be administered with additional follow up or notification to employees prior to receiving the survey, this could increase the response rate in addition to providing time at the workplace to complete the survey.

Recommendations for management implementing health promotion programs in an organization include ensuring the marketing of the program is geared to those most willing to participate, for example younger employees for the Corporate Challenge or females for the Lunch and Learn program. Or, conversely programming could reflect the needs and interests of older employees. Knowing that employees with alcohol related problems are the least likely to participate in health promotion programs may require specific programs geared at this issue. Promoting decision latitude can be influenced at work productivity and efficiency by providing autonomous environments for employees thus impacting motivation, self-efficacy and learning.

Appendix 1
Information Sheet for Prospective Participants

Title of Project: Job and Health Survey

Principal Investigator:

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Nancy (Angus) Zuck is a student doing her Master of Science in Health Promotion at the University of Alberta. She would like your help to understand the relationships between jobs, health and participation in workplace wellness programs. This will be Nancy's MSc thesis research project. You can help by filling out and returning the attached questionnaire by **April 3, 2000**.

The Job and Health Survey asks a number of questions about your work experiences and about your health. It will take about 30 minutes to complete. We would like you to fill out the questionnaire during lunch or at home. Your employer has given permission for us to ask you to participate in the research study and participation in the study is completely voluntary, but the questionnaire is only being used as a student project for the University of Alberta.

If you volunteer to participate, there are a few things you should know. First your answers to the questionnaire are anonymous, meaning that no one can identify you, including your employer and the researchers. PLEASE DO NOT INCLUDE ANY IDENTIFYING INFORMATION ON THE QUESTIONNAIRE. Second, because this is an anonymous survey, results will be reported so that you and your department cannot be identified in anyway. Third, a report will be prepared for your employer, summarizing the results of the survey. However, because this is an anonymous survey, your employer will not be able to identify you personally or link your responses to any personal information held by your employer. Fourth you can always decline to answer any particular question, or decide to stop participating at any time. Finally, all of the information we collect will be kept in a locked cabinet and nobody other than the research team will have access to this information. This information will be held in a secure location for at least seven years after the study is completed as mandated by the University of Alberta. By completing the following questionnaire you have indicated that you understand these conditions and that you have granted consent to participate in this study.

If you have any questions about the survey, please feel free to contact Nancy or her Thesis Supervisor, Dr. Cam Wild, using the information at the beginning of this sheet. If completing this survey makes you feel uncomfortable in any way please call Dr. Miriam Stewart (collect) at (780) 492-4039 or the City of Calgary's Employee Family Assistance Provider (on a confidential basis): "CHC – Working Well" at 261-5888. We hope that you will take the time to help with this master's thesis research project.

Thank you very much for being a part of this study!

Appendix 2

Job and Health Survey

Instructions

This survey asks a number of questions about opinions and attitudes towards work and health. Please write your answers directly on the questionnaire in either pen or pencil. There are no right or wrong answers. Your responses will not be given to your employer, and only results from group data will be released.

This survey is completely anonymous, your identity will not be revealed to anyone including the researcher. By completing this survey and returning it you will be giving consent to participate in the study. Please try to answer all of the questions as honestly as possible.

When you are finished the survey please fold the survey in half and staple the top of it and return it through your employer's internal mail system. If you prefer, seal the questionnaire in an envelope and send it via internal mail to code 8106. All questionnaires will be held at this mail code for the researcher.

Please complete the questionnaire and return as soon as possible

Thank you very much for agreeing to participate in the survey!

Your Background

First, we would like you to tell us about yourself.

1. What is your Age?_____ Gender?_____

2. Marital Status?
- ☐ Single
- ☐ Married
- ☐ Divorced/ Separated
- ☐ Widowed
- ☐ Other (please describe): _____

3. What is the highest level of education you have completed? (check one)
- ☐ Elementary School
- ☐ Junior High School
- ☐ High School
- ☐ College Degree
- ☐ Undergraduate University Degree
- ☐ Graduate University Degree

4. What is your current personal annual income? (check one)
- ☐ Less than $20,000
- ☐ $21,000 – $30,000
- ☐ $31,000 – $40,000
- ☐ $41,000 - $50,000
- ☐ $51,000 - $60,000
- ☐ $61,000 - $70,000
- ☐ $71,000 - $80,000
- ☐ $81,000 and greater

5. What type of job do you have?
- ☐ Administrative/ clerical
- ☐ Labourer/ Foreman
- ☐ Management
- ☐ Professional
- ☐ Technical

What is your job title? _____
(remember all answers are completely anonymous)

Characteristics of Work

The next set of questions asks about your job and the work that you typically do. For these questions, please check the box with the answer that comes the closest.

6. My job requires that I learn new things.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

7. My job involves a lot of repetitive work.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

8. My job requires me to be creative.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

9. My job allows me to make a lot of decisions on my own.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

10. My job requires a high level of skill.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

11. On my job, I have very little freedom to decide how I do my work.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

12. I get to do a variety of different things on my job.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

13. I have a lot of say about what happens on my job.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

14. I have an opportunity to develop my own special abilities.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

15. My job requires working very fast.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

16. My job requires working very hard.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

17. I am not asked to do an excessive amount of work.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

18. I have enough time to get the job done.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

19. I am free from conflicting demands that others make.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

20. My job requires long periods of intense concentration on the task.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

21. My tasks are often interrupted before they can be completed, requiring attention at a later time.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

22. My job is very hectic.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

23. Waiting on work from other people or departments often slows me down on my job.

☐	☐	☐	☐
Strongly Disagree	Disagree	Agree	Strongly Agree

24. How satisfied are you with your job?

☐	☐	☐	☐
Not at all	Not Too	Somewhat	Very

25. Would you advise a friend to take this job?

☐	☐	☐
Advise Against	Have doubts about it	Strongly Recommend

26. Would you take this job again?

☐	☐	☐
Take without Hesitation	Have second thoughts	Definitely not

27. How likely is it that you will find a new job in the next year?

☐	☐	☐
Very likely	Somewhat	Not at all

28. Is the job like what you wanted when you applied for it?

☐	☐	☐
Very Much	Somewhat like	Not very much like

DURING THE PAST 12 MONTHS, HAVE YOU EXPERIENCED THE FOLLOWING?

29. Do you have trouble with sweaty hands which feel damp and clammy?

☐	☐	☐	☐
Often	Sometimes	Rarely	Never

30. Do you have trouble with feeling nervous, fidgety or tense?

☐	☐	☐	☐
Often	Sometimes	Rarely	Never

31. Do you have trouble with poor appetite?

☐	☐	☐	☐
Often	Sometimes	Rarely	Never

32. How often have you become tired in a short period of time?

☐	☐	☐	☐
Often	Sometimes	Rarely	Never

Participation in Wellness Programs

Your employer offers a number of wellness programs through Health, Safety and wellness. We are interested in whether you take advantage of any of the following programs listed. During the last year, have you participated in any of the following? Please also indicate your willingness to participate in the next year by circling a number from 1-5.

Wellness program	Participated 1999?		Willingness to Participate in 2000?				
	Yes	No	Very willing	Unwilling	Don't know	Willing	Very willing
Active Living Pass	☐	☐	☐	☐	☐	☐	☐
Lunch and Learn	☐	☐	☐	☐	☐	☐	☐
Stress Menu	☐	☐	☐	☐	☐	☐	☐
Increasing your Human Effectiveness	☐	☐	☐	☐	☐	☐	☐
Corporate Challenge	☐	☐	☐	☐	☐	☐	☐
Critical Incidence	☐	☐	☐	☐	☐	☐	☐
EFAP (Employee Family Assistance Program)	☐	☐	☐	☐	☐	☐	☐

General Health Behaviors

The next set of questions asks about a number of health behaviors, including physical activity, alcohol use, and smoking.

33. Considering a 7-day period (a week), how many times on average do you do the following
kinds of exercise for more than 15 minutes during your free time?

Strenuous exercise (heart beats rapidly, i.e., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling):

_____ times per week

Moderate exercise (not exhausting, i.e., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing):

_____ times per week

Mild exercise (minimal effort, i.e., yoga, archery, fishing, bowling, horseshoes, golf, snow-mobiling, easy walking):

_____ times per week

34. Considering a 7-day period (a week), during your leisure time, how often do you engage in
any regular activity long enough to work up a sweat (heart beats rapidly). Check one:

☐	☐	☐
Often	Sometimes	Never/rarely

35. How often do you have a drink containing alcohol? (Circle one)

☐	☐	☐	☐	☐
Never	monthly or less	2 to 4 times per month	2 to 3 times per week	4 or more times per week

36. How many drinks containing alcohol do you have on a typical day when you are drinking?

☐	☐	☐	☐	☐	☐
none	1 or 2	3 or 4	5 or 6	7 to 9	10 or more

37. How often do you have six or more drinks on one occasion?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

38. How often during the last year have you found that you were not able to stop drinking once you had started?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

39. How often during the last year have you failed to do what was normally expected from you because of drinking?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

40. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

41. How often during the last year have you had a feeling of guilt or remorse after drinking?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

42. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

☐	☐	☐	☐	☐
never	less than monthly	monthly	weekly	daily or almost daily

43. Have you or someone else been injured as a result of your drinking?

☐	☐	☐
no	yes, but not in the last yr.	yes, during the last year

44. Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?

☐	☐	☐
no	yes, but not in the last yr.	yes, during the last year

45. Have you ever smoked cigarettes?

☐ no ☐ yes

46. At the present time, do you smoke cigarettes?

☐ no ☐ yes

47. How long ago was it that you last smoked?

☐ less than one month ☐ one to six months ☐ seven to eleven months ☐ one to five years ☐ more than five years

48. How soon after you wake up do you smoke your first cigarette?

☐ I don't smoke ☐ after 60 minutes ☐ 31 - 60 minutes ☐ 6 - 30 minutes ☐ within five minutes

49. How many whole cigarettes do you usually smoke in an average day?

_____ I don't smoke
_____ number of cigarettes

50. Have you ever tried to quit smoking?

☐ no ☐ yes If yes, how many times? _____

Personal Choices and Social Support

You have just answered a number of questions about health behaviors including physical activity, diet, alcohol use, and smoking. This next set of questions asks about these health behaviors in relation to different people in your life. We usually associate with different people, for example, family, friends or people at work. The next question is about these relationships.

Looking back over the last 12 months, who among these people were ***(1) the family member that you are closest to and (2) the friend outside of the workplace you are closest to and (3) the friend inside the workplace you are closest to.*** *Please indicate their initials (or first name) in the space provided. Then answer the following questions for each person you have named.*

For each person listed, complete the following questions.	**Family member I'm closest to:**	**Friend outside of work I'm closest to:**	**Friend inside of work I'm closest to:**
	Person # 1 (Initials)	**Person #2 (Initials)**	**Person #3 (Initials)**
What is the gender of this person?	Male Female	Male Female	Male Female
Has this person ever talked to you about health behaviors in the last 12 months? If yes, which health behavior was it?	Yes No Health Behavior	Yes No Health Behavior	Yes No Health Behavior
In the past 12 months, how much pressure has this person put on you to change one or more health behaviors?	1 no pressure 2 3 4 5 a lot of pressure	1 no pressure 2 3 4 5 a lot of pressure	1 no pressure 2 3 4 5 a lot of pressure
In the past 12 months, how much pressure has this person put on you to get help with these health behavior(s).	1 no pressure 2 3 4 5 a lot of pressure	1 no pressure 2 3 4 5 a lot of pressure	1 no pressure 2 3 4 5 a lot of pressure
How much support would this person give you to make your own decisions about whether or not to change a health behavior?	1 no support 2 3 4 5 a lot of support	1 no support 2 3 4 5 a lot of support	1 no support 2 3 4 5 a lot of support
How much support would this person give you to make your own decisions about whether or not to change a health behavior?	1 no support 2 3 4 5 a lot of support	1 no support 2 3 4 5 a lot of support	1 no support 2 3 4 5 a lot of support

Coping

In this last section, we are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This question asks you to indicate what you have generally done and felt when you experienced stressful events in the last 12 months. Obviously different events bring out somewhat different responses, but think about what you usually did when you were under a lot of stress in the last year. Each item says something about a particular way of coping. We want to know to what extent you did what the item says. How much or how frequently. Don't answer on the basis of whether it works or not- just whether or not you did it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I usually didn't do this at all
2 = I usually did this a little bit
3 = I usually did this a medium amount
4 = I usually did this a lot

51. I turned to other activities to take my mind off things. _____
52. I concentrated my efforts on doing something about the situation I'm in. _____
53. I said to myself "this isn't real." _____
54. I used alcohol or other drugs to make myself feel better. _____
55. I got emotional support from others. _____
56. I gave up trying to deal with it. _____
57. I took action to try to make the situation better. _____
58. I refused to believe that it happened. _____
59. I said things to let my unpleasant feelings escape. _____
60. I got help and advice from other people. _____
61. I used alcohol or other drugs to help me get through it. _____
62. I saw it in a different light to make it seem more positive. _____
63. I criticized myself. _____
64. I tried to come up with a strategy about what to do. _____
65. I got comfort and understanding from someone. _____
66. I gave up the attempt to cope. _____
67. I looked for something good in what's happening. _____
68. I made jokes about it. _____
69. I did something to think about it less, such as go to the movies, watching TV, reading, day dreaming, sleeping, or shopping. _____
70. I accepted the reality of the fact that it has happened. _____
71. I expressed my negative feelings. _____
72. I tried to find comfort in my religion or spiritual beliefs. _____
73. I tried to get advice or help from other people about what to do. _____
74. I learned to live with it. _____
75. I thought hard about what steps to take. _____
76. I blamed myself for things that happen. _____
77. I prayed or meditated. _____
78. I made fun of the situation. _____

Thank you very much for completing this survey! Remember, all of your responses are completely anonymous.

When you are finished the survey please fold the survey in half and staple the top of it and return it through your employer's internal mail system. If you prefer, seal the questionnaire in an envelope and send it via internal mail to code 8106. All questionnaires will be held at this mail code for the researcher.

Please complete the questionnaire and return by April 3, 2000

JOB AND HEALTH SURVEY

MAIL CODE 8106

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