

## Lifestyle habits, substance use and predictors of job burnout in professional working women

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This study explores differences in self-reported lifestyle habits, substance use (alcohol, drugs and smoking) and predictors of job burnout in a sample of 879 professional working women employed in dental health offices in a cross-sectional design. Job burnout was measured using the Maslach Burnout Inventory (MBI) and self-reported substance use and lifestyle habits were assessed using the Stress Assessment Profile. Self-reported drinking, smoking and drug use were only modestly correlated with each other in this sample. Employed women with higher levels of drinking reported significantly lower quality overall lifestyle practices, eating/nutrition habits, and more frequent use of avoidant coping strategies in the face of work and life hassles compared to non-drinkers. Women who smoked also reported significantly lower overall lifestyle practices and eating/nutrition habits. Those who reported using drugs for recreational purposes reported significantly greater hassles, poorer lifestyle habits, a less hardy outlook on life, and more frequent use of dysfunctional coping strategies. Although women who reported using drugs experienced significantly higher interpersonal burnout (depersonalization) compared to non-drug users, in general, self-reported substance use was not significantly related to job burnout. After controlling for age and psychological distress, perceived stress, type A behaviour, cognitive hardiness and lifestyle habits significantly contributed to predictions of job burnout in multiple regression analyses. Despite methodological limitations, the prevalence of substance use found in this study supports previous research findings. Professional working women who practise poor lifestyle and health habits appear to be at risk of experiencing job burnout.

### 1. Introduction

A growing body of research supports a consistent, albeit modest, relationship between psychosocial and organizational variables and diverse physical and psychological health outcomes in employed men and women (cf. Taylor 1990, LaCroix and Haynes 1987, Rabkin and Struening 1976). Specific organizational stressors such as heavy job demands, role ambiguity, role conflict, poor communications between supervisors and employees, inadequate training, dysfunctional support systems, interpersonal conflict, inability to reach career goals, lack of feedback from supervisors, and lack of control over decision-making have been consistently shown to be associated with various productivity and diverse health problems (Beehr and Newman 1978, Frew and Brunning 1987, LaCroix and Haynes 1984, Karasek *et al.* 1981). Of growing interest are the roles of individual mediating factors including social support, type A behaviour, coping style, personality hardiness and lifestyle practices with psychological well-being and job burnout.

For example, several reviews of the literature on social support (e.g. LaRocco *et al.* 1980),

Kessler *et al.* 1985) tend to confirm a moderately strong relationship between social support (however measured) and psychological symptoms (however measured). Although the results of recent research suggest that social support may attenuate feelings of job burnout (emotional exhaustion, depersonalization, personal accomplishment), few studies have directly examined the relationship between social support and burnout. Nowack *et al.* (1985), in their study of the psychosocial predictors of job performance and burnout in student resident assistants, found a significant association between satisfaction with social support and job burnout. In that study, Nowack *et al.* (1985), found that social support significantly and incrementally contributed to predictions of the depersonalization and personal accomplishment, but not emotional exhaustion, dimensions of burnout above that of health habits in the small sample of part-time students ( $n = 41$ ). In his study of 567 Israeli managers, Etzion (1984) found a significant relationship between social support and job burnout. In that study, measures of availability and quality of social support at work, and life in general, accounted for 10% of the variance in a measure of job burnout.

The construct of personality hardiness has also generated considerable interest within the health psychology and behavioural medicine literature as a possible mediator of the stress-illness relationship (Kobasa 1979, Kobasa *et al.* 1981, 1982). Personality hardiness is typically conceptualized as a multi-dimensional construct consisting of internal locus of control (*versus* powerless), commitment to work and life activities (*versus* alienation), and perception of life changes and demands as a challenge (*versus* threat). Results from a growing body of retrospective and prospective studies have explored the association between personality hardiness and illness with other known stress mediators including type A behaviour (Kobasa and Puccetti 1983, Nowack 1986), social support (Ganellen and Blaney 1984, Kobasa and Puccetti 1983), and exercise and health habits (Kobasa *et al.* 1982, Roth *et al.* 1989, Nowack 1991).

Hardy individuals may experience less illness because hardiness leads directly to adaptive coping responses (e.g. health-enhancing lifestyle habits, optimistic explanatory styles, improved social support systems) ameliorating the potential negative effects of stress on overall health status. There is limited support for the hypothesis that hardy individuals perceive stressful work and life events as more controllable and positive than individuals low in hardiness (Allred and Smith 1989, Rhodewalt and Zone 1989). It might be hypothesized that hardy individuals will experience less psychological distress and job burnout in the face of work and life stress. In their study of 234 male highway patrol officers Hills and Norvell (1991) found hardiness to display significant increases in  $R^2$  values in stepwise multiple regressions with the emotional exhaustion dimension of job burnout as the dependent variable. In their study of 750 teachers, Pierce and Molloy (1990) compared high and low burnout groups on biographic, psychological and work factors. Teachers who reported high levels of job burnout reported significantly lower personality hardiness and social support, and greater role stress than their low burnout counterparts. Nowack (1986) explored the buffering effects of both hardiness and type A behaviour using daily life hassles as his measure of stress, and job burnout as his psychological health outcome in a prospective design. His subjects were 193 human service employees, 68% of whom were women. Hardiness was significantly associated with lower levels of psychological distress and job burnout, and for subjects under stress, higher levels of hardiness were associated with lower levels of burnout. In this study a significant hardiness  $\times$  type A behaviour interaction was also observed with respect to job burnout.

The competitive, hard-driving, impatient, and hostile type A behaviour pattern has long been hypothesized to mediate the stress-illness relationship as well as being associated with the development of coronary heart disease (cf. Taylor 1990, Chesney *et al.*, 1981). Individuals expressing type A behaviours might be expected to experience greater job burnout due to their striving for achievement and hard-driving orientation. For example, individuals express-

ing greater type A behaviour generally report more workload than do those expressing less type A behaviour (Burke and Weir 1980, Ivancevich *et al.* 1982). In addition to workload, type A people tend to report higher levels of stress (Howard *et al.*, 1977) and role conflict (Kelly and Houston 1985, Ivancevich *et al.* 1982). Furthermore, Type A subjects report working longer hours and more overtime (Caplan and Jones 1975, Kelly and Houston 1985) and travel more on the job (Howard *et al.* 1977). Additionally, in both a student and employee sample, type A behaviour has been found to be significantly associated with each of the job burnout dimensions (*cf.* Nowack and Hanson 1983, Nowack 1987).

Thus, type A behaviour as a distinct coping style in response to perceived work, and life stressors would appear to contribute to feelings of emotional exhaustion, poor interpersonal relations and lack of personal and professional accomplishment. To date, few studies have directly explored the relationship between individual coping styles and measures of job burnout, although an extensive literature exists investigating the role of coping with other health outcomes (e.g. Taylor 1990, Nowack 1989). Pierce and Molloy (1990) found that higher levels of job burnout were significantly correlated with more frequent use of regressive coping strategies. In their study, Pierce and Molloy (1990) defined and measured regressive coping behaviours as attempts to deny, minimize or avoid stressful situations perceived to be challenging or threatening.

Additionally, lifestyle practices and specific health habits have also been individual factors long hypothesized to be associated with diverse health outcomes as well as job burnout. For example, Nowack *et al.* (1985) found that health habits significantly contributed to predictions of burnout with a student sample, but not in a longitudinal study of 146 employees when a composite measure of job burnout was used (Nowack 1987). Unfortunately, separate analyses with the individual burnout dimensions of emotional exhaustion, depersonalization and personal accomplishment were not reported, making the findings of this study difficult to fully interpret. In general, lifestyle practices and health behaviours would appear to be one of the most modifiable, and arguably most important of all individual stress-illness mediators.

In 1979 the Department of Health, Education and Welfare released the Surgeon General's report on health habits and disease prevention. Several major categories were singled out as important health-damaging behaviours related to lifestyle practices that appear to play a role in a variety of illnesses and diseases. These lifestyle behaviours include stress management, smoking, substance abuse, lack of physical activity, preventive hygiene and poor eating/nutritional habits. For example, recent household surveys conducted throughout the United States suggest that at some time during the life cycle, 4-8% of the population may abuse drugs, 14-20% may abuse alcohol, and 13-20% may succumb to various forms of mental disorder requiring treatment (Robins *et al.* 1984). It has been estimated that between 5% and 10% of the general population suffers from alcoholism, and that 3-7% of the employed population uses drugs (Quayle 1983). As a consequence, US businesses are estimated to suffer annual productivity losses approaching \$36.6 billion dollars. Part of these expenditures result from substance abusers' 16-fold greater absenteeism and 400% greater accident rate as compared with the non-abusing employed population (Masi 1984). Specifically in the area of corporate injuries and fatalities, 40% and 47% respectively may be attributed to alcohol and other substance abuse (Quayle 1983).

The data suggest that there is a great deal of alcoholism, drug abuse and even mental disorders in the general population. Those in the workforce who manifest such disorders are productivity and cost burdens at their places of business. Since the advent of the Rehabilitation Act of 1973, significant segments of the managerial community have been largely restrained from simply discharging employees whose absenteeism, injury rate and productivity are inadequate. Instead, managers are being forced to consider the possibility that employee

substance abuse and behavioural problems may be the result of a protected disability. As long as the rehabilitation laws keep their present force, it is expected that some form of psychological services will continue to become part of the corporate environment. There is a growing literature that demonstrates the cost-effectiveness of including psychological programmes in offices and factories (Masi 1984) and of the ability of such services to reduce the use of medical benefit plans by those who are excessive users (Jones and Vischi 1979).

For example, smoking is certainly one of the strongest contributors to both premature death and disability and a major health risk factor, with smokers having more than twice the risk of cardiovascular disease than non-smokers (American Heart Association 1989). Smoking clearly affects the bottom line for all organizations. Studies indicate that smokers have an absenteeism rate approximately 40% higher than non-smokers and a 50% greater chance of hospitalization (Abramson 1988). The cost to employer for a smoker averages from \$335 to over \$4000 per year.

The prevalence of smoking, although declining, is estimated to be 18–22% in the United States (American Heart Association 1989). In a recent prospective study with several hundred professional and managerial male and female employees in a major aerospace company in the Los Angeles area, slightly less than 20% reported to be smokers (Nowack 1990). In general, most of these employees are open to modifying their health-damaging behaviour. A recent study by the Health Research Institute indicates that of employers offering wellness programmes, more than 86% include smoking cessation, which is listed as the most popular of the wellness programmes. Because recent findings suggest that formal treatment programmes are no more successful than employees attempting to quit by themselves, it can be expected that in-house smoking cessation programmes will continue to remain both popular and cost-effective (Cohen *et al.* 1989).

The effects of alcohol consumption on health and the response to alcoholic treatments have been major issues in the addiction field. While widely acknowledged that chronic drinking adversely affects health (e.g. Turner 1977), the effects of more moderate drinking, although controversial, are less clear (Popham and Schmidt 1978). Women are far more likely to be non-drinkers than men, and even those women who do drink consume significantly less in quantity. Men are more than four times more likely to be heavy drinkers than women, with respective rates of 13.0% and 2.9% (Johnson 1982, Beiner 1987, Kinney and Leaton 1991). In spite of the concern that drinking problems among women have been increasing and going unnoticed, there is no evidence in studies of trends since the 1960s that the gender ratio is converging (Beiner 1987).

There has been speculation that, as sex roles become more liberalized and women increase their presence in the workforce, use of alcohol and other drugs will increase due to increased opportunities for exposure and the perceived appropriateness of regular use (Beiner 1987). Some studies have explored the prevalence of drinking in subgroups of women to determine whether specific roles were more typical of women with drinking problems. Some limited evidence suggests that employed married women were more likely to be heavy drinkers than those not working outside the home (Johnson 1982). In general, the results of these studies suggest that non-employed women are more likely to report total abstinence than employed women, but this finding does not necessarily indicate greater stress-related drinking in the employed group. In general, fewer studies on alcohol have focused on professional working women despite well-known differences in cognitive (Abrams and Wilson 1979; Lindbeck 1972) and biophysiological (Lieber 1981) processes and the recognized health-care costs associated with foetal alcohol syndrome. In general, accurate knowledge about the prevalence and use of alcohol and other drugs in employed and non-employed women is severely lacking.

Recent evidence suggests that consumption of alcohol leads to more extreme social behaviour, inflates self-evaluations, and results in a general impairment of perception and thought (Steele and Josephs 1990). Furthermore, despite well-known adverse health consequences associated with drinking, individuals who drink more tend to deny the potential harm that may result from alcohol consumption (Hansen *et al.* 1991). Findings from Hansen *et al.* (1991) support the hypothesis that men and women at risk of experiencing common negative consequences of drinking perceive themselves to be immune. These findings have important implications for identifying, assisting and treating professional working women who may be abusing alcohol and other drugs.

This study explored specific psychosocial factors and health habits (including self-reported alcohol, cigarette, prescription/non-prescription drug use) associated with predictions of job burnout in a large cross-sectional national sample of employed women in the dental health profession ( $n = 879$ ). Specifically, this study compared differences in work and life hassles (stress, cognitive hardiness, type A behaviour, lifestyle practices, health habits, coping strategies and job burnout between high and low users of alcohol, nicotine and other non-prescription drugs. Consistent with previous research, it was hypothesized that women reporting greater use of these substances would experience significantly higher perceptions of hassles (stress), less frequent practice of health-enhancing habits and practices (e.g. physical activity/exercise, eating/nutritional practices), more frequent use of dysfunctional coping strategies (e.g. self-blame, detachment from social supports), and higher levels of job burnout (emotional exhaustion, depersonalization, lack of accomplishment) compared to non-users.

## 2. Methods

### 2.1. Participants and procedures

Participants for this study were professional and administrative staff working in orthodontic offices throughout the United States who were asked to participate in a research study investigating the relationship between stress, lifestyle habits and job burnout. Data for this study are part of a broader research project reported elsewhere (Nowack *et al.* 1992). An initial inquiry letter and questionnaire were distributed through the mail to 3178 employees with a cover letter explaining the purpose of the study and assuring confidentiality of the results. In exchange for their cooperation, each respondent received a computerized feedback report summarizing the results of the stress and health risk appraisal. A total of 1067 questionnaires were returned, giving a response rate of 33.5%. The final sample included 82.4% women and 17.4% men, with a mean age of 35.75 ( $SD = 9.86$ ). A total of 185 (17.5%) were orthodontists, 127 (11.9%) were office managers, and 751 (70.6%) were office staff. Only data for women (professional and office staff) were included in the final analysis of this study. The mean age was 33.82 ( $SD = 8.87$ ) with a range from 20 to 65 years of age. In this sample only 0.9% of working women were practising orthodontists, 14.5% worked as office managers, and 84.6% worked in a variety of professional and office staff positions.

*Independent variables.* Separate measures of hassles, lifestyle behaviours and coping style were assessed using a comprehensive questionnaire (Stress Assessment Profile) containing 123 items, that has shown adequate reliability (average test-retest reliability over a 2-week period is 0.82) and validity with health and organizational outcomes in previous studies (Nowack 1987, 1989, 1991). A complete description of the development and psychometric properties of this measure has been reported previously (Nowack 1990).

The questionnaire assesses the following scales:

- (1) *Stress*: this was measured using a six-item scale based reflecting a mixture of chronic concerns (e.g. unsatisfactory personal relationships, financial problems) and minor irritants (e.g. traffic, social obligations) of daily living. This scale provides an index of the appraisal of stress (hassles) over a 3-month period and has demonstrated adequate internal consistency reliability (alpha) of 0.68.
- (2) *Coping style* was assessed by a 20-item scale which assesses four coping responses: intrusive positive thoughts (positive self-talk), intrusive negative thoughts (negative self-talk), avoidance (anxiety or neuroticism), and problem-focused coping (behavioural attempts to modify one's behaviour or the environment). High scores on these scales suggest frequent use of these coping styles. These scales have shown internal consistency reliabilities ranging from 0.68 to 0.79 in previous studies.
- (3) *Cognitive hardiness* was assessed by a 30-item scale composed of items measuring attitudes and beliefs about work and life including: *Involvement—commitment, as opposed to alienation, to one's work, family, self, hobbies*; *Challenge—attitudes around viewing life changes as challenges as opposed to threats*; and *Control—beliefs that one has an internal locus of control over significant outcomes in work and life*. The hardiness scale has demonstrated moderate internal consistency reliability of 0.84 and shown to predict a variety of health outcomes in recent studies (Greene and Nowack 1991, Nowack 1990, 1991).
- (4) *Global lifestyle practices* were measured by a 25-item scale assessing the daily practice of specific behaviours hypothesized to be conducive to both physical and psychological well-being. Separate lifestyle scales include physical activity/exercise, rest/relaxation, and nutrition/eating practices. High scores on the global lifestyle practices and scale suggest the frequent practice of health habits on a regular basis. The global and separate lifestyle scales have shown internal consistency reliabilities ranging from 0.68 to 0.81.
- (5) *Social support* was measured using an 18-item scale assessing the domains of utility, availability and satisfaction with five separate groups including co-workers, supervisor/boss, family, friends and significant others. An overall social support score is calculated across all five groups for this scale which has demonstrated adequate internal consistency reliability (alpha) of 0.83.
- (6) *Type A behaviour* was measured with a brief 10-item scale conceptually based upon the Framingham Type A scale (FTAS). High scores on this scale suggest more frequent use of achievement striving, competitive, hurried, impatient, cynical, angry and hostile reactions to work and life stressors. This scale has shown adequate internal consistency reliability of 0.73 and convergent validity with both the Jenkins Activity Scale (JAS) and FTAS scales. Sample items include: 'I feel hurried and pressured for time (i.e. not having enough time to get everything done at work or home)', 'I am quick to experience and express impatience and irritability over event, situations, and people at work and at home'.
- (7) *Psychological well-being*. Was measured by a 12-item scale assessing a respondent's overall work and life satisfaction. High scores suggest low overall somatopsychic distress and emotional negativity. Sample items include: 'Feeling positive, confident, and secure with yourself'; 'Pleased with your life overall'; and 'Able to relax and enjoy yourself without worry'. In the present study this scale showed a higher internal consistency reliability (alpha) of 0.93.
- (8) *Response bias* was measured by a five-item scale based on the Marlowe Crowne Social Desirability scale. This scale assesses carelessness and rare answers. Sample items include: 'I've never been sick a day in my life', and 'I've been depressed at least once in my life'.

*Measurement of self-reported substance use.* Asking men and women how often they use alcohol, drugs or cigarettes in response to work and life stress would appear to be the most straightforward research technique and is, in fact the predominant one. This technique assumes that individuals are willing to be honest in their self-reports (Crowne and Marlowe 1964). Recent evidence suggests that women are more likely than men to report symptoms of physical and emotional distresses (Pennebaker 1982) and are more likely to interpret feelings of malaise and distress as psychiatric problems requiring treatment (Kessler *et al.* 1981). It would be reasonable to assume that women would be more likely than men to acknowledge distress as a motivator for substance use despite evidence suggesting that most individuals possess an overly positive, albeit unrealistic, view of themselves (Taylor and Brown 1988).

Three separate items from the Stress Assessment Profile (Nowack 1990) were used to assess self-reported alcohol consumption, cigarette smoking and use of other drugs for recreational purposes.

- (1) *Alcohol consumption:* alcohol consumption was assessed by a single item that asked frequency of alcohol consumption (e.g. wine, whisky, beer, etc.) on a 1 to 5 scale where 1 = Non-drinker; 2 = Consumed less than three alcoholic beverages only occasionally (e.g. weddings, birthday celebrations); 3 = Consumed one to three alcoholic beverages in 24 hours several times/week; 4 = Consumed more than three alcoholic beverages in 24 hours several times/week; and 5 = Consume more than three alcoholic beverages every day.
- (2) *Cigarette smoking:* smoking status was assessed by a single item on a 1 to 5 scale where 1 = Non-smoker; 2 = one half pack of 20 per day; 3 = three-quarters of a pack per day; 4 = one pack per day; and 5 = More than one pack per day.
- (3) *Drug use:* use of prescription and non-prescription drugs for recreational or non-medicinal purposes (e.g. cocaine, marijuana, stimulants, depressants), other than alcohol, was assessed using a 1 to 5 frequency scale where 1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; and 5 = Always.

*Dependent variables.* The construct of burnout has been defined and conceptually linked to the stress-illness relationship in a number of recent studies (Maslach and Jackson 1981). Burnout has been defined as being an outcome of work and life stress characterized by self-perceptions of emotional exhaustion, cynicism, negativity, low commitment, fatigue, low morale, resistance, detachment and low productivity. Burnout was measured using the *Maslach Burnout Inventory* (MBI; Maslach and Jackson 1981).

The MBI assesses the three burnout dimensions of emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA). Estimates of internal consistency (Cronbach's alpha) range from 0.90 for EE, 0.79 for DP, and 0.71 for PA. Test-retest reliabilities range from 0.65 to 0.82 for these scales. The MBI has been found to be significantly associated with a variety of performance and health outcomes, including job satisfaction, absenteeism, psychological distress and organizational commitment in recent studies (Maslach and Jackson 1981). Recent research has shown consistent evidence for the construct validity of the MBI, particularly for emotional exhaustion (Koeske and Koeske 1989, Lee and Ashforth 1990, Arthur 1990).

### 3. Results

A summary of the means, standard deviations, reliabilities and intercorrelations among the study variables is given in table 1. Each of the job burnout scales was significantly associated with each of the psychosocial variables included in the study.





Table 2. Prevalence of self-reported drinking, smoking and drug use in professional working women ( $n = 879$ )

	Number	Percentage
<i>Self-reported drug use</i>		
Always	7	0.8
Often	10	1.1
Sometimes	17	1.9
Rarely	48	5.5
Never	796	90.7
<i>Self-reported cigarette smoking</i>		
More than 1 pack	5	0.6
One pack of 20 a day	19	2.2
Three-quarters pack a day	21	2.4
One-half pack a day	69	7.8
Non-smoker	765	87.0
<i>Self-reported alcohol consumption</i>		
More than three drinks/day every day	3	0.3
More than three drinks/day several times/week	18	2.1
One to three drinks/day several times/week	117	13.3
Occasional drinker	505	57.5
Non-drinker	236	26.8

The association between drinking, smoking and self-reported drug use in this sample of professional working women was moderate with average correlations between these scales ranging from 0.14 to 0.22 (all  $p$  values  $< 0.001$ ). With respect to cigarettes and non-alcoholic drug use, only 13.0% of the sample reported to be smokers and 9.3% admitted to using non-prescription or prescription drugs for recreational purposes. Finally, with respect to alcohol consumption, 26.8% reported that they never drink, 57.5% drink only infrequently or on special occasions, and 15.7% drink from one to three drinks within a 24-hour period several times a week to every day. Table 2 summarizes these self-reports of substance use as assessed in this study.

One-way analysis of variance (ANOVA) was used to determine differences in stress, lifestyle habits, coping style, and job burnout between 'users' and 'non-user' groups. Table 3 summarizes these analyses. However, for analysis with alcohol consumption, three separate groups were delineated: (1) non-drinkers; (2) occasional drinkers; and (3) moderate drinkers.

With respect to cigarette smoking, significant differences were observed with respect to overall lifestyle habits ( $F = 22.35, p < 0.001$ ) and eating/nutritional practices ( $F = 13.43, p < 0.001$ ). Women who drank the most reported significantly worse overall lifestyle habits ( $F = 7.00, p < 0.001$ ), eating and nutritional practices ( $F = 4.41, p < 0.05$ ), and less frequent use of an avoidant coping style ( $F = 3.92, p < 0.05$ ). Thus, professional working women who reported the highest drinking levels also expressed a greater tendency towards preoccupation with work and life stressors.

Women who reported using non-prescription or prescription drugs, other than alcohol, for recreational purposes reported significantly higher levels of hassles, less frequent practice of overall lifestyle habits, lower cognitive hardiness and more frequent use of dysfunctional coping strategies in the face of work and life stress (less frequent use of intrusive positive self-talk and avoidant strategies; greater use of negative intrusive self-talk). Additionally, women who reported using drugs also expressed greater job burnout on the depersonalization scale

Table 3. Differences between self-reported substance use, stress, lifestyle habits and job burnout ( $n = 379$ )

Stress profile scales	Alcohol consumption			F
	Non-drinker	Occasional drinker	Moderate drinker	
Lifestyle habits	86.71	84.89	83.04	7.01**
Eating/nutrition	23.15	22.16	22.03	4.41*
Avoidant coping style	15.92	15.34	15.66	3.92*
Stress profile scales	Smoking		F	
	Smoker	Non-smoker		
Lifestyle habits	81.12	85.64	22.34**	
Eating/nutrition	20.93	22.61	13.43**	
Stress profile scales	Drug use		F	
	Drug user	Non-drug user		
Stress	17.88	16.93	4.23*	
Lifestyle habits	80.42	85.52	20.72**	
Eating/nutrition	23.41	24.36	5.92**	
Rest/relaxation	15.67	16.46	4.21*	
Cognitive hardiness	103.11	106.38	4.91*	
Intrusive positive coping	16.37	17.15	5.28*	
Intrusive negative coping	14.19	13.14	6.93**	
Avoidant coping style	14.96	15.60	3.93*	
Job burnout (depersonalization)	5.84	4.63	4.30*	

\* $p < 0.05$ ; \*\* $p < 0.01$ .

(table 3). Although causality can not be determined, women who used drugs experienced more frequent feelings of cynicism, negativity and sensitivity in their interpersonal relations on the job.

Aside from the findings above, no other significant differences in stress or job burnout were observed between substance users and non-users (alcohol, cigarettes, other drugs). These findings do not support the hypothesis that substance use, as defined and measured in this study, is significantly associated with perceptions of stress and job burnout.

Table 4 presents the results of separate stepwise multiple regression analyses with job burnout (emotional exhaustion, depersonalization, personal accomplishment) as the dependent variable. Relevant demographic variables (age, sex) were entered in the first step of the regression to control for the influence these variables may have on health. Additionally, psychological well-being was also entered in the first step to minimize the effect of negative affectivity on self-reported health status (Watson and Pennebaker 1989, Watson and Clark 1984).

With respect to the emotional exhaustion component of job burnout, type A behaviour, hassles, cognitive hardiness and lifestyle habits significantly contributed to predictions of this dependent variable above those of age, sex and psychological well-being. With respect to the depersonalization component of job burnout, cognitive hardiness, type A behaviour, social support network, and stress significantly contributed to this dependent variable. Finally, cognitive hardiness, positive self-talk, problem-focused coping, social support network, and an avoidant coping style significantly contributed to predictions of the personal accomplishment component of job burnout. In general, the professional women included in this study who reported higher levels of hassles, type A behaviour, and lower levels of lifestyle habits, cognitive

Table 4. Results of multiple regression analyses with job burnout as the dependent variables ( $n = 1067$ )

Variable	RSQ	RSQ Change	F
<i>Emotional exhaustion</i>			
Age, psychological well-being	0.17	0.17	89.17**
Stress	0.24	0.07	74.20**
Type A behaviour	0.29	0.05	52.46**
Hardiness	0.31	0.03	33.85**
Lifestyle habits	0.32	0.01	7.62**
Social support		2.49	
Avoidant coping style		1.01	
Problem-focused coping		0.89	
Negative coping style		0.71	
Positive coping style		0.64	
<i>Depersonalization</i>			
Age	0.09	0.09	44.12**
Hardiness	0.14	0.05	44.87**
Type A behaviour	0.17	0.03	29.72**
Social support	0.18	0.01	10.71*
Stress	0.19	0.01	5.93*
Avoidant coping style		1.25	
Positive coping style		0.04	
Lifestyle habits		0.01	
Problem-focused coping		0.01	
<i>Personal accomplishment</i>			
Age, psychological well-being	0.19	0.19	102.15**
Positive coping style	0.25	0.06	54.733**
Hardiness	0.27	0.02	28.25**
Social support	0.29	0.02	16.31**
Problem-focused coping	0.30	0.01	11.02**
Avoidant coping style		2.24	
Type A behaviour		1.30	
Hassles		0.29	
Lifestyle habits		0.18	
Negative coping style		0.18	

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

hardiness and dissatisfaction with social support experienced the greatest levels of burnout on the job.

#### 4. Discussion

This study investigated differences in work and life hassles, lifestyle practices, health habits, type A behaviour, hardiness, coping style and job burnout in 879 professional working women in the dental health field as a function of self-reported substance use (smoking, drinking, other drugs). Three major findings can be summarized in this sample of professional working women: (1) except for somewhat lower smoking prevalence rates, self-reported use of alcohol and other drugs appear to be generally consistent with previously published research and national surveys for working women; (2) high levels of self-reported substance use (smoking, drinking, other drugs) were significantly associated with poor overall lifestyle practices and eating/nutritional habits; and (3) high self-reported substance use of alcohol and cigarettes were not significantly associated with measures of daily life hassles or job burnout.

Despite the relatively large sample size and emphasis on professional working women in this study, several important limitations must be pointed out. These limitations suggest that the results of this study should be interpreted cautiously. First, the national sample within the dental health profession was cross-sectional in nature and self-selected. As such it may not be highly representative, hence generalizable, to all professional working women outside dental health care. Furthermore, because the respondents were self-selected, this convenience sample may be unique and different from a randomly selected national survey sample using the same assessment instruments included in the present study.

Second, this study relies exclusively on self-report data. As such, it is subject to social desirability response bias, deception or distortion (e.g. Taylor and Brown 1988, Crowne and Marlowe 1964). Furthermore, administration of the assessment instruments was done in a confidential, but not completely anonymous, manner. Each respondent participating in this study received a confidential computerized feedback report, along with a letter informing her that the information contained in this report would not be shared with anyone. However, it is plausible that because anonymity was not completely ensured, respondents might have underestimated their actual use and intake of the substances assessed in this study.

Third, due to the concurrent design used, causality cannot be determined among the psychosocial variables included in this study. For example, employed women who reported use of prescription and non-prescription drugs for recreational purposes also reported significantly more hassles and job burnout (depersonalization). It can be argued that daily hassles and burnout may contribute to the use of drugs as an ineffective coping technique, or that drug use exacerbates stressful work and life events and job burnout.

Fourth, the measures of smoking, drinking and other drugs used in this study may be criticized as single-item scales that lack specificity and established validity. Although the Stress Assessment Profile has shown construct and criterion-related validity in several recent studies (cf. Nowack 1989, 1990, 1991, Greene and Nowack 1991), no construct validity exists for these measures of self-reported substance use. It should be pointed out that this criticism would appear less important in the assessment of smoking because national surveys typically use single-item measures to assess smoker versus non-smoker groups (cf. Cook 1987, Beiner 1987).

For example, the measure of self-reported drug use utilized in this study does not adequately assess quantity, type or location (i.e. work or home). Nonetheless, it is likely to be a general indicator of users and non-users. With respect to the measure of alcohol consumption, two specific criticisms should be pointed out. In general, most investigators have not adequately accounted for alcohol content of different beverages when assessing alcohol content (Martin and Nirenberg 1991). A problem with standard drink measures is that different beverages vary in exact alcohol content. Therefore, ignoring alcohol content variation when estimating consumption can introduce a great deal of error variance. As Martin and Nirenberg (1991) emphasize, researchers should assess alcohol consumption in terms of number, size and alcoholic content of beverages. Second, the current measure of alcohol consumption does not accurately or diagnostically categorize normal moderate drinkers from those with true alcohol dependence (gamma alcoholics). As such, it is not possible to determine the prevalence and extent to which respondents truly are alcohol-dependent in this study.

Fifth, the psychosocial variables that significantly contribute towards predictions of job burnout (table 4) must be interpreted cautiously: (a) these are concurrent, rather than prospective, data; (b) even modest associations (i.e. multicollinearity) between predictors in a multiple-regression equation introduce a degree of instability in the results. Therefore, firm conclusions about the results must await cross-validation in a longitudinal design.

Finally, although negativity affectivity was controlled for by entering it in the initial step

of the regression analyses with job burnout, it is possible that both predictor and outcomes measures used in this study are confounded by neuroticism. Previous research has demonstrated that chronically worried and distressed individuals (i.e. high neuroticism), relative to more emotionally stable individuals, consistently report high levels of psychosomatic complaints, even though they are no more likely to experience actual physical illness (Watson and Clark 1984). That is, there is a consistent and strong association between neuroticism and illness complaints, but not actual illness *per se*. Future research using self-report outcomes should attempt to control for the nuisance variable of neuroticism whenever possible, to ferret out psychological *versus* organic contributors to health and well-being. It should be emphasized that self-reports are a convenient starting point for demonstrating that psychosocial characteristics may have some relevance to health. However, given the limitations of self-report measures, they should not be relied upon too heavily as criteria for either establishing or disconfirming associations with physical and psychological health status.

It has been mentioned previously that 4–8% of the adult population may abuse drugs, and that 95% of all problem drinkers are employed (or employable), comprising approximately 10% of the workforce (Robins *et al.* 1984, Kinney and Leaton 1991). Furthermore, although women are more likely to be non-drinkers than men, it is estimated that 3% of all women are heavy drinkers (Kinney and Leaton 1991). Except for somewhat lower smoking prevalence rates, the present findings (table 2) appear to be generally consistent with previously published research on self-reported drug and alcohol use in professional working women (cf. Beiner 1987, Lindbeck 1972, *Heart Facts* 1989). Despite the methodological limitations and criticisms summarized above, it would appear that the results of this study do contribute to the growing literature on substance use in employed professional women.

In this study, poor overall lifestyle practices were consistently and significantly associated with greater self-reported substance use (table 3). Although causality cannot be determined, it appears that women who drink, smoke and use other drugs do not appear to practise many health-promoting behaviours on a day-to-day basis (e.g. getting regular exercise, maintaining healthy eating and nutritional habits, getting adequate rest, relaxation and sleep). Regardless of the direction of causality, it is certainly important to note that poor lifestyle habits combined with a substance problem will have both direct and indirect effects on morbidity and mortality in women. The deterioration of health habits in long-term substance abusers has been a well-known and documented fact (e.g. Kinney and Leaton 1991, Beiner, 1987). However, women who smoke and drink at even low levels might also be at risk for premature death and disability if they do not exercise regularly, monitor their intake of saturated fats and cholesterol, and do not obtain routine medical checkups. In summary, the findings of this study suggest that women who moderately smoke, drink or use other drugs are unlikely to be practising health-promoting habits and behaviours on a day-to-day basis.

In this study, little evidence was found of an association between daily hassles, job burnout and self-reported substance use (table 3). However, women who reported using non-alcohol-related drugs did report significantly higher levels of daily life hassles and depersonalization than those who did not. Thus, women in this study who expressed feelings of being cynical towards others, less customer-service-oriented, less caring, and more critical of others tended to be those reporting use of non-prescription and prescription drugs for recreational purposes. It was not possible to determine the exact type of drugs that were taken (prescription *versus* non-prescription) or location of use (home *versus* office) in this study. Future research should replicate this basic study with multiple measures of work and home stress and also include more sensitive and valid measures of substance use and abuse.

The lack of an association between self-reported smoking, alcohol use and daily life hassles in the present study supports the findings of Corcoran and Parker (1991), who found little or

no evidence that stress was a predictor of alcohol consumption in a controlled experimental study with 69 college students. In this study the authors experimentally placed the students in a non-stress or stress situation and provided an opportunity for the students to consume alcoholic or non-alcoholic beverages. No differences were found between the two stress/non-stress groups with respect to actual alcohol consumption or on the Tension subscale of the Alcohol Expectancy Questionnaire (Brown *et al.* 1980). However, it must be emphasized that the present study did not differentiate between true alcohol-dependent females (gamma alcoholics) and moderate drinkers. As such, it can be argued that the present study does not adequately address the hypothesis that substance use is associated with stress and job burnout. Future longitudinal research is still needed to explore the very dynamic and reciprocal relationship between work/life stress, substance use and dependence.

One explanation for these results is related to the unique sample of women in this study. Little or no pertinent demographic information was available for further analysis (e.g. family roles, marital status, number of children). The influx of women into the labour force initially generated concern that paid employment might increase cardiovascular and other health risks for working women compared to housewives (LaCroix and Haynes 1987, Murdaugh 1986). Other research studies have found that the prevalence of type A behaviour appears to be increasing for women as women increase their involvement in the workplace (cf. Davidson *et al.* 1980, Waldron 1978, 1980). However, recent studies comparing risk factors for chronic disease and health status indicators among employed women and housewives have found that working women have fewer sick days, fewer acute conditions, fewer hospital days and better psychological well-being compared to non-working women (cf. Warr and Parry 1982, Wheeler *et al.* 1983, Hibbard and Pope 1985). The fact that more employed women are engaged in multiple roles such as worker, parent and spouse has also been suspected as a contributor to adverse health status (Barnett *et al.* 1985, Kandel *et al.* 1985). However, several recent investigations have examined multiple roles in relation to a variety of health status measures and have shown just the opposite (Hazuda *et al.* 1986, Verbrugge 1983, Verbrugge and Madans 1985). These studies suggest that the more roles that women are involved in, the healthier they tend to be. Additional longitudinal research with diverse samples of working women across all ages is needed to better understand and validate these preliminary findings.

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