



**WORK HABITS, WORKING CONDITIONS AND
THE HEALTH STATUS
OF THE EXECUTIVE CADRE IN THE
PUBLIC SERVICE OF CANADA**

A Synopsis of APEX's 1997 Study

Association of Professional Executives
of the Public Service of Canada

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INTRODUCTION

In the fall of 1997, APEX conducted a study on the health status of the Executive (EX) Group in the Public Service of Canada. The Association had become very concerned about the impact of the working conditions and working environment on the health of federal public service executives, the repercussions of which are both personal and corporate. APEX had already communicated executives' thoughts on this issue to the "centre", where our concern was shared. However at that point, our observations were largely based on anecdotal evidence from Association members and representatives of the medical community in Ottawa-Carleton. It was time to conduct a comprehensive survey to assess the physical and psychological health of executives so that the relationship between workplace conditions, work habits and the health status of those who are responsible for the implementation and management of the change process could be documented. The research was based on a review of existing literature on those workplace factors which influence employee health, particularly during and after periods of major organizational change. The work led by **Gail Taylor** through APEX's Research Committee — in particular the *Survey of Surveys* — was an important influence on the study's design.

The Association wishes to recognize the expertise and professionalism of the research team composed of principal investigator **Dr. Wayne Corneil**, Teaching and Research Fellow, Epidemiology and Community Medicine, Faculty of Medicine, University of Ottawa; and collaborator researchers **Dr. Julian Barling**, Chair of Ph.D. and M.Sc. programs, Executive Programs, School of Business, Queen's University, and **Dr. Gail Hepburn**, Lecturer, Faculty of Psychology, Guelph University. We also wish to thank the members of the Association's 1996-97 Services to Members Committee for their help in refining the study mandate:

Margot Cameron
Janet Hughson
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Dr. Wayne Corneil

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With the full report expected by the end of 1998, APEX has formed a small, ad hoc committee to make recommendations to the Association's Board of Directors on action to be undertaken by APEX or to be proposed to central agencies and departments. We thank the members of this committee for their ongoing contribution:

Joanne Cohen-Sulzenko
Andrew Graham
Warren Maidens

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Kathryn Hamilton
Patricia McDowell

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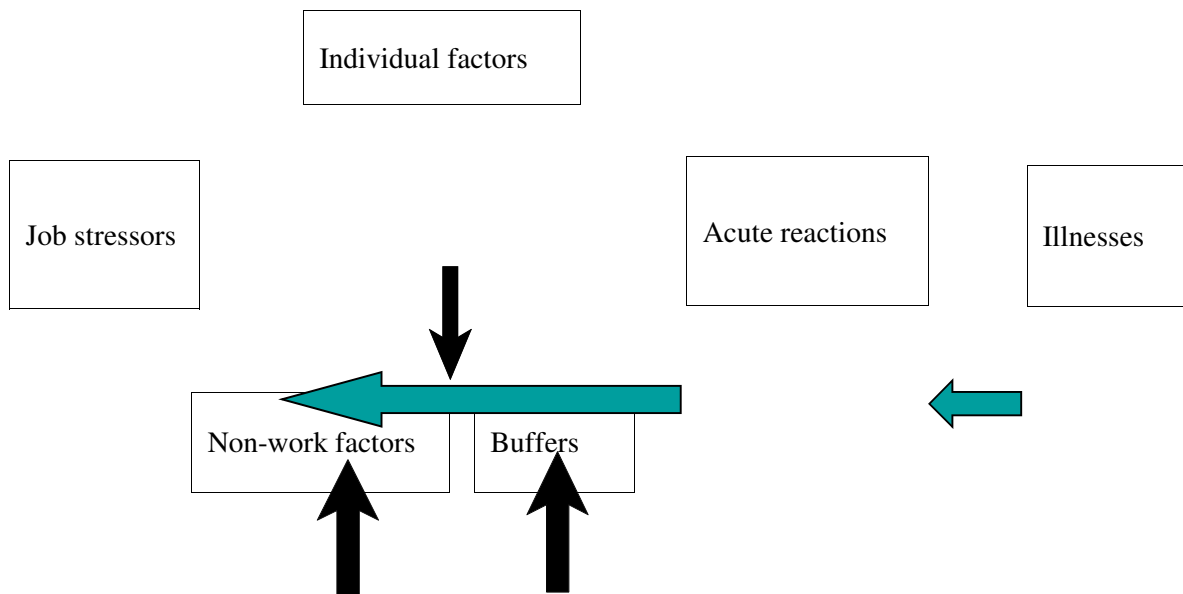
CRITICAL STUDY INFORMATION

The APEX Survey on the Work and Health Status of Executives in the Federal Public Service was based on accepted methodology used in occupational health research, which focuses on the relationships between the work environment, working conditions and health outcomes. These methods are recognized by the international community of occupational health psychologists and epidemiologists who conduct studies in this area.

The specific instruments used in the APEX questionnaire were developed by the National Institute of Occupational Safety and Health (U.S.). They meet psychometric standards for reliability and validity. At the present time, they are the most common measures for the study of working conditions and work environment factors, having been used in a number of different countries, and across a wide variety of occupational situations. The General Health Questionnaire — one of the specific measures — is the most commonly used measure of health status internationally.

The survey was conducted in partnership with the **University of Ottawa’s School of Medicine** and **Queen’s University School of Business**; both required that the survey meet stringent standards for research. The data (which is “owned” by APEX, but held by the two institutions involved) were collected by Queen’s and analyzed by both universities. The study design, methodology and instruments were based on internationally recognized and accepted protocols for research on occupational health so that comparisons could be made to other research and the results benchmarked in the context of existing data. **The APEX study is a snapshot in time of the executive cadre and as such does not allow for trend analyses. However, the methodology does permit it to be replicated both across populations and time to permit such trend analysis.**

The analytical model used can be described with the following chart:



The *job stressors* element represents workload, interpersonal conflicts, role ambiguity, job future ambiguity, responsibility for others and skill under-utilization.

Individual factors are characteristics such as age and gender, whose effects have been taken into consideration in the study.

Non-work factors are stressors in one's personal life.

Buffers are social support from supervisor, colleagues, friends and family, as well as decision control (decision latitude).

Acute reactions are effects such as insomnia, headaches, colds or minor infections and gastro-intestinal upset such as heartburn. These are like the fever that precedes an infectious disease. They are warnings that something is happening to the immune system.

Illness outcomes are those which research has demonstrated are linked to psychosocial stressors: cardiovascular diseases (CVD); hypertension; coronary heart disease (CHD); musculoskeletal disorders (e.g. back pain); diabetes; gastro-intestinal disorders (e.g. ulcers); psychological disorders (e.g. anxiety and depression).

Data were collected from 36% of all executives employed in the Public Service at the time the study was conducted. This is considered a very high response rate for this type of research. **The study sample was representative of the overall population for all major demographic factors:** age, gender, location of work, size of department, and all levels within the EX category. This means that the study findings can be generalized for the larger population.

The average number of years respondents had been employed in the public service was 22.6 years, and in their current position, 3.4 years.

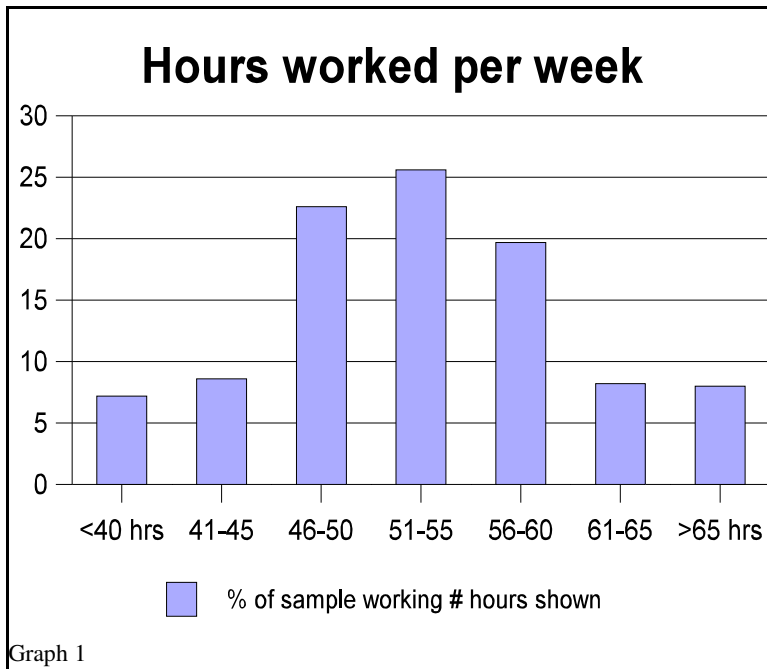


WORK HABITS

The graph at the top of the next page shows the combined number of hours worked per week at the office and at home. The average number of **hours spent on work** was 52.9 hours per week, with just under a third (30%) of the sample reporting 60 or more hours a week. Data from Statistics Canada indicate that for members of the professional and managerial groups in the general population, the hours of work average 43.2 hours a week. The hours reported by the APEX study group were also higher than the Statistics Canada data for public administrators in other jurisdictions.

The respondents to the APEX survey reported spending an average of 7.2 hours a week working at home,

with over a third (34%) reporting ten or more hours a week devoted to work taken home from the office.



Graph 1

Less than 10% indicated that they never worked on weekends, either at home or in the office.

Another indication of work habits is the number of **days spent travelling**, as well as the number of nights and weekends spent away from home travelling for work. On average, the study group spends 6 working weeks (30.9 days) a year travelling for business purposes. Most trips include spending a night away from home: on average 30 per year, plus 3 weekends per year on travel status.

There were significant differences between men and women for all variables relating to travel. Men are away more frequently, both in terms of nights (31.7, whereas 27

for women) and weekends (4.0, but 2.7 for women). The rates were also significantly different between lower and higher level EXs, with the latter being away weekends more frequently (3.3 times vs 2.7 times).

Executives in regions were more likely to travel than those in the National Capital Region (NCR) and those in regions were also away more nights (32.7 as opposed to 23.1 for the NCR). However, there was no difference between regions and NCR for weekends away on travel.

When asked about **time off**, the group said they took an average of 17.1 days per year of vacation leave — about 3 working weeks. Given the average number of years of service, **this is not their full entitlement** of 4-5 weeks per year. This is borne out when one looks at the number of banked vacation days, which averages 35.0 or 7 weeks. **Almost no one took days off in lieu** or took advantage of management leave. Less than a third (28%) used these options for time off. When they did use them, they took an average of 1.7 days off in lieu and 1.3 days of management leave. Based on the comments written on questionnaires, many were not aware of these provisions or were reluctant to request such leave.

Respondents' use of sick leave was considerably lower than the norm for the rest of the public service. The average days of sick leave claimed per year across the entire public service is 8 days. This study group was averaging 3.5 days, with **over a third (34.0%) taking no time off for sick leave.** On average this group had 232.5 days of sick leave in the bank.



WORKPLACE FACTORS

Research has shown that psychosocial factors can provoke physiologic responses, which include increases in neuro-immunologic responses, increased muscle tension and blood pressure. When chronic, these responses can impair or damage the musculoskeletal, cardiovascular and other body systems, producing illness. The literature on psychosocial work factors includes examinations of:

- job control (task and decision authority);
- workload (time pressures, quantity);
- skill utilization;
- social support (from superiors and colleagues);
- work schedules;
- role ambiguity;
- responsibility for others;
- role conflict;
- interpersonal conflict;
- job future ambiguity; and
- organizational culture.

When compared to a community-based sample of all occupational groups conducted by NIOSH (National Institute for Occupational Safety and Health), the APEX sample had higher rates for *interpersonal conflicts* (both inter- and intra-group); *workload*; *responsibilities for others*; *intellectual demands* and *job future ambiguity*. One might expect those in senior management positions to have higher rates for certain of these elements, but not necessarily for conflict or job future ambiguity.

The study examined the responses for factors which are normally considered to be buffers in the relationship between work stressors and health outcomes (buffers act to lessen the impact of such stressors). For example, the APEX group sought less social support from superiors or colleagues than did the NIOSH community sample. The APEX respondents tended to seek more social support from sources outside of the workplace, i.e. family or friends. It has been noted in the research that when dealing with work stressors, **work-based social support is more powerful as a buffer than support from outside.**

For the other buffer controls, the APEX sample was also lower than the community-based sample. In addition, overall job satisfaction was lower for the APEX respondents.



HEALTH OUTCOMES

Levels of distress

The General Health Questionnaire (GHQ) is the most widely used instrument around the world to measure acute levels of distress. It was designed to identify: “ 1) an *inability to carry out one’s normal “healthy” functions*, and 2) *the appearance of new phenomena of a distressing nature*”. It does not look at lifelong traits, but focuses on normal, routine functioning in the context of how an individual’s patterns of adjustment are related to distress. An individual scoring high on its scales is said to be “*disturbed, emotionally stirred up, altered in this respect from his normal self*”. Such reactions are likely to create an increased susceptibility to minor somatic conditions and may affect their capacity to

function in their daily routine. The scores compare a person's current state to their normal situation.

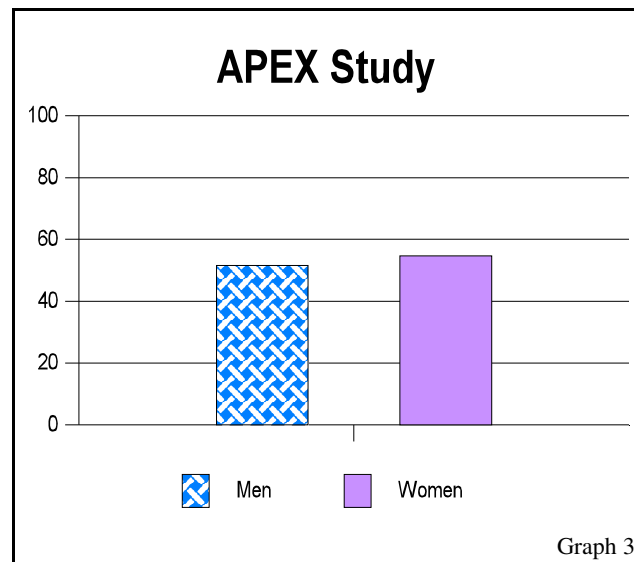
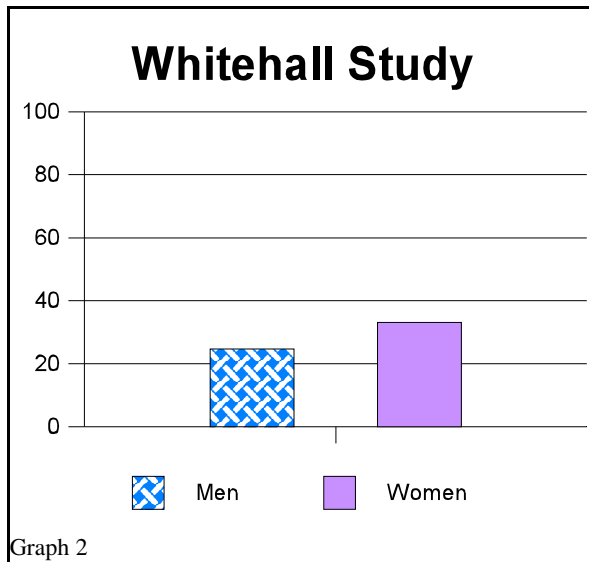
The GHQ provides for a general score and for a number of sub-scales. In this study, the sub-scales used were for *somatic complaints*, *anxiety* and *social functioning*.

The mean scores for this sample on the three sub-scales were all in the upper ranges. Using the standard cut point for sub-scales of 2 or more as indicative of distress, the following results are observed:

- 37.9 % were above the cut point on the somatic sub-scale (mean = 1.99);
- for anxiety, 44.9 % were above the cut point with a mean of 2.5; and
- for social dysfunction, 28.9 % were over the cut point (mean = 1.6).

Using the GHQ overall cut point of 4 and applying it to the modified scales, 38.1 % of our respondents could be considered to be experiencing distress at levels which meet the diagnostic criteria. Distress **decreases by level** within the executive group. At the EX-1 level, 58.3% were above the norm. This fell to 50.0% for EX-2s; to 51.1% for EX-3s and to 47.3% for EX-4s and 5s.

Researchers compared the APEX results on distress levels with those from the executive cadre in the UK civil service, as reported in the Whitehall II study (see charts above). The rates for both men and women in the APEX study were almost double. Whitehall found rates meeting the diagnostic levels of 24.7% for males and 33.1% for females. The APEX data show rates of 51.6% for men and 54.7% for women.



These rates are also higher than studies done on health care professionals in both the UK and more recently in Quebec.

Short-term health effects

In reporting on their health status for the previous three months, the majority of respondents noted a variety of difficulties. Fully 92% reported having sleep-related problems. Over half — 52% — indicated that they frequently had headaches arising from work pressures. **More than two thirds — 68.9% — said that they went to work even when they had infectious diseases** like colds, flu, bronchitis, etc. More than half (58%) had some form of gastrointestinal upset.

The study shows that 10.6% had personally sought counselling for either a family or work-related problem in the previous 12 months. An additional 2.8% had sought professional assistance in both areas. This means that a total of 13.4% of the sample had sought help. In contrast, the utilization rate for employee counselling services across the federal public service is 8%. Just over 15% of the APEX study respondents reported that an immediate family member had also sought counselling in the past 12 months.

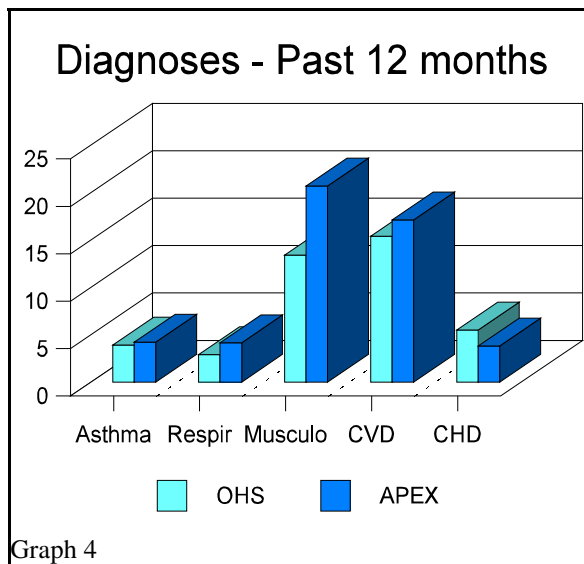
Although they are not using their sick leave, this group averaged 2 visits per person to a medical practitioner in the six months prior to the survey. This is higher than would normally be expected for this type of population.

Long term health effects

Among this group, significant numbers have recently (within the past 12 months) been diagnosed with major health conditions: 16.4% with cardiac diseases; 8.0% with respiratory illnesses; 8.1% with gastrointestinal disorders; 19.4% with back problems; 5.8% with insomnia and 3.8% with emotional problems.

In order to compare these rates of illness, the Ontario Health Survey (OHS) was used. To control for age, which is a major contributing factor to health status, only those ages 45-60 were included in the comparisons.

The chart at left shows the percentage of persons diagnosed with certain health problems within the preceding twelve month period. When one focuses on those illnesses for which research has demonstrated that work stress is a major predictor, we see that the APEX sample has higher rates for a number of illnesses.



Graph 4

The importance of this comparison can be underscored by examining two diseases in particular. Cardiovascular diseases and coronary heart disease have both been shown to be related to work stress. However in this context, their rates also reveal a common phenomenon which must be considered when dealing with any work-related disorder. The Healthy Worker Effect refers to the fact that those who are seriously ill tend to leave the workforce and therefore do not get included in studies like the present one; i.e. their cases are not captured through distribution of questionnaires.

At 17.1%, the rates for Cardiovascular Diseases (CVD) are higher within the APEX group than for the province-wide population sample (at 15.4%). However the rates for Coronary Heart Diseases (CHD) are

lower among the APEX group at 3.8% than the provincial rate of 5.5%. This is most likely due to the Healthy Worker Effect and is a predictable result. Those with CHD are more likely to be away from work as the treatment for this disease is more intensive than others, often involving surgery and longer recuperation than for CVD. Hypertension is most often responsive to medication, changes in diet and modification of lifestyle. This means that those with CVD are more likely to stay at work and respond to surveys of this nature. Thus the difference in rates for these two diseases would tend to reinforce the comparison and to emphasize that the trends depicted are related to the unique characteristics of the sample.



WORKPLACE FACTORS ASSOCIATED WITH HEALTH OUTCOMES

The study analysed which factors contributed to increased risk for each of the various psychological and physical health outcomes. In order of their relative contribution to these outcomes, the following table summarizes the findings.

Psychological disorders	Physical disorders
Lack of control	Lack of control
Workload	Job insecurity
Role conflicts	Role conflicts
Job insecurity	Lack of supervisory support
Skill under-utilization	Responsibility for others
Lack of supervisory support	
Load variance	
Intra-group conflicts	

When these factors were examined across various filters, such as *demographic profiles; size of department; work location; years of service; type of department* (operational vs policy); *degree of change* (most affected vs least affected); and *level*, only the latter was found to be significant. Preliminary analyses indicated there might be some relationship between the outcomes, and the size and location of the respondent's organization. However, more advanced analyses which controlled for all factors and their interrelationships found that only *level* maintained its robustness in predicting the strength of these factors.

What this indicates is that **the relationship between work factors and health outcomes is systemic, not related to any individual or departmental characteristics.** For all of the various stressors, the higher the level within the EX Group, the less potent the effect of the stressor. This is a function not of the degree of demands on the person, but of the level of control which is exercised as one moves up in level. The data were consistent across all variables in demonstrating that **control was the most effective buffer on the negative effects of work stressors** on either psychological distress or health outcomes. Age, gender, years of service, location or type of department were not significant moderators. The nature and scope of control increased as one moved from the EX-1 to the EX-5 level. Associated with the

increase in control came a decrease in work stressors and negative health outcomes.



PREDICTING HEALTH OUTCOMES

One of the purposes of the study was to determine if the reported workplace factors (both protective factors and stressors) would predict health outcomes. As well, the study sought to determine which factors had the greatest impact on outcomes. The three outcome measures — distress, health problems and job satisfaction — were highly related. The health outcomes were positively correlated, in that high distress was associated with high levels of health problems. Job satisfaction was negatively related to both outcomes: low levels of job satisfaction were related to high levels of distress and health problems.

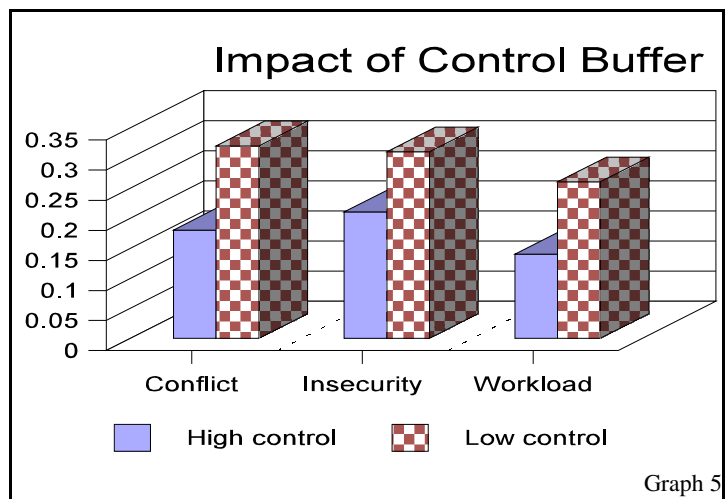
The workplace factors successfully predicted levels of distress. However, not all variables made a significant contribution. Workload, role conflict, job future ambiguity and intragroup conflict significantly increased individuals' likelihood of having higher levels of distress. Reports of higher levels of control and supervisor support had the opposite effect and decreased the likelihood of distress.

The chart at right demonstrates the impact of the control buffer on levels of **psychological distress**.

Level within the EX group produced the only difference in the impact of the control buffer. Virtually all of the factors we measured differed significantly as a function of the respondents' level and not for other reasons.

This study is consistent with other research which has established a pathway for how workplace factors as well as certain organizational and structural stressors (demands) can be mediated by the degree of control individuals can exercise over their daily functioning. As demonstrated in the present study, when this control is not present the levels of distress are greatly increased, as are the short-term health consequences. Longer term, serious health problems are also predicted in this pathway.

For this population, odds ratios were calculated to examine the predictive relationship between the level of distress and various disease outcomes. In looking at those who met the diagnostic criteria for the GHQ, the odds ratios revealed significant relationships. **The likelihood of someone with a high level of distress having musculoskeletal problems increased by 90%; for cardiovascular disease the increase was 120%; for gastrointestinal problems it increased by 210%; for coronary heart disease it went up 350% and for mental health disorders it was a staggering 1740% increase.**



SUMMARY

This study again confirmed the pathway between psychosocial factors and health outcomes which has been so well documented elsewhere in the medical literature. The findings are consistent in showing that **individuals' lack of job control is more strongly related to distress levels, short-term health complaints and longer term health disorders than other factors, including personal lifestyle habits.**

The degree of control is determined by level within the Executive Group, with those at higher levels having more control and less distress or health consequences. However, the issue is systemic, not associated with any one department or location. **It is clear that if one takes a healthy person and places them in an unhealthy environment — no matter what degree of hardiness or resiliency they may have to begin with — the unhealthy work situation will create an unhealthy individual.** Traditional stress management approaches intended to assist individuals to adapt to unhealthy environments do them and the organization a disservice.

The impacts are felt not only by the individuals concerned and their families; those persons who exhibit high levels of distress are functioning in a fashion which is neither productive nor contributing to the overall success of the organization.

Moreover, **the costs of such ill health are borne directly by the organization.** The fastest growing category for claims under the Disability Insurance Plan for federal employees is for mental health disorders. In 1995, the overall rate for mental health claims as a proportion of all new claims for all public servants was 33.4% . In 1996, it was 37.5%, up from less than 20% a decade earlier. However. The proportion of mental health disability claims for executives was 47% in both years noted.

The largest cost area for the supplemental health insurance benefit plan is for prescription drugs. The major drugs being prescribed are for those diseases which are most associated with stress disorders such as anxiety, depression, cardiovascular and coronary heart diseases.

The data from this study indicate that for at least those members of the group who are still at work, the key factor to be addressed is that of decision latitude or control. *Decision latitude* can be simply described as having the ability to say “no” without fear of reprisal or punishment. It would appear from these data, that in the largest segment of the EX community — the lowest levels — this is not a routine occurrence.