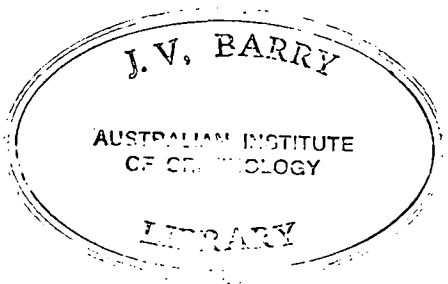
The Effects of Job Design on Physical and Mental Health Among Prison Officers.

David Morrison, BA, MA, PhD[1],
Psychology Department,
University of Queensland,
St. Lucia, QLD 4072.

Robert Fitzgerald, BA, PhD
Dept. of Corrective Services,
441 Murray St,
Perth, WA 6000.

and

Michael Dunne, BA, PhD,
Dept. of Psychiatry,
Royal Brisbane Hospital,
Herston, QLD.



[1] Address for correspondence; tel. 07 365 6398;
fax 07 365 4466

CONTENTS

EXECUTIVE SUMMARY

Recent years have seen increasing public discussion about the occupational health of prison officers in Australia. These people work in what is regarded by many as a difficult profession. The problems faced the penal system and ultimately by prison officers themselves, appear to have increased as a result of developments that have occurred in the past few years. Examples of such changes include:

i. Overcrowding in prisons which puts a particular strain on prison officers, in terms of increases in job demands and constraints. It is arguable that the recent spate of prisoner unrest and demonstrations, are a result of unsuitable conditions in the penal institutions. In the state in which the current study was undertaken, a fire and riot occurred, during which a number of prison officers were physically assaulted and some taken hostage for several hours. The ripple effects of such an event, it is said, were felt in most other prisons throughout the state.

ii. The media focus on the Royal Commission into Aboriginal Deaths in Custody and recent escapes from prisons have put the spotlight on officer behaviour in ways that are not always favourable.

iii. The nature of the prison population is changing, prisoners are becoming more aware of their rights and less accepting of officer authority. Other prisoners are diffuclt to manage because of their special circumstances (i.e., those who are infected with the Human Immunodeficiency Virus (HIV)).

iv. In the state in which the current study was undertaken there have been significant changes to the management practices in prisons in each state of Australia with the introduction of "Unit Management" practices. In general, this trend in management involves multi-skilling, where individual officers are required to become more closely involved with prisoner welfare and occupational rehabilitation, as well as continuing in their traditional roles in the containment of criminals.

Given the nature of the job, and the specific stressors or changes which are imposed from time to time, many questions

arise. For example, is it the case that prison officers report more "stress" than the general population? Do prison officers experience more physical health problems that the average person? If so, are the levels of poor physical health related to the perceived stress of the job? And what of job satisfaction? Is this related to specific aspects of the job, such as the work demands and the amount of support (or lack of it) officers receive, or is it mainly related to factors such as the officers' personality? For instance, those of a more sensitive disposition may not fair well in a prison environment. Can selection methods be refined to exclude those less well suited to the nature of the job?

Many of these questions are addressed directly in the present study. In addition, the study was also concerned with examining the model of stress proposed by Karasek (Karasek and Theorell, 1990) which claims that job strain is influenced by the interaction of three job characteristics: job demands, supports and constraints. We added a fourth variable to the model, that of personality. One aim was to examine the moderating influence of negative affect (something akin to trait anxiety and/or neuroticism) and job characteristics on physical and mental well being. Specifically, it was predicted that job demands and negative affect would combine, interactively, to account for a significant proportion of the variability in measures of mental and physical well-being. If such an effect could be demonstrated then the effects reported in an earlier study of prison officers (Morrison, Dunne, Fitzgerald and Cloghan, 1992) would be replicated.

This report contains the results of a survey of 391 prison officers conducted in 1990. In broad terms the data reveal that the prison officers participating in the study were physically and mentally less healthy than what would be expected of a sample taken from the wider community. In addition, there was also a significant sex difference in well-being officers with female officers fairing significantly better than their male counterparts.

Some differences between prisons were also evident. Officers in the medium security prisons had higher levels of job satisfaction and exhibited fewer symptoms of physical ill-health than officers at other prisons. At the same time they perceived their working environment as being more supportive of them and less constraining. This pattern of results is in contradiction of the data from a smaller study reported by Dunne and Morrison (1991) where it was found that officers in a medium/maximum security prison were the least healthy. It has been suggested, albeit anecdotally, that the changed pattern in the medium security prisons may reflect changes in management practices. The general pattern of the results with regard to job characteristics, attitude and health is however, reasonably consistent with earlier work.

Officers' perception of job demands as well as work and non-work social supports were found to have a significant impact on work attitudes (i.e., job satisfaction and organizational commitment), absenteeism rates, well-being and health related behaviours (e.g., alcohol consumption) and well-being. Negative affect was also found to influence these variables, but its

influence was most notable when it was found to interact with job demands and non-work supports.

Several practical and theoretical implications follow from the results of this study. First, they suggest that selection strategies may be usefully employed to reduce overall levels of stress in the officer population. Measures of negative affect may prove to be particularly useful in this regard. This strategy, however, will only be of benefit to those officers employed in the future rather than to those currently employed by the Department of Corrective Services. Second, the degree to which work and non-work supports can be manipulated, or increased, will have a positive impact on well being and attitude. As such, this strategy offers a proactive management strategy which will have benefit for current as well as future employees.

The theoretical implications of this survey are that additional refinement and standardisation of the instruments which measure job characteristics is needed. The various facets of job demands, supports and constraints need to be investigated more thoroughly to determine their underlying factorial structure. More refined measures will lead to better predictions and, perhaps, more effective intervention strategies. In addition, levels of experienced strain and the order of importance of moderating variables needs further scrutiny. Finally, in the absence of generally accepted and standardised measures of job characteristics it is apparent that more longitudinal research is required as this would be beneficial in helping to determine the causal influences of different job characteristics to varying levels of strain.

INTRODUCTION

Theoretical Background.

Several studies have found prison officers to have poor health and high levels of stress and anxiety relative to control populations (Harenstam and Theorell, 1988; Launay and Fielding, 1989; Webster, Porritt and Brennan, 1983). This poorer health profile may be associated with predisposing lifestyle and demographic factors (Webster et al., 1983) and it may also be related to characteristics of the work environment (Harenstam and Theorell, 1988; Dunne and Morrison, 1991).

Prison officers have many working conditions which expose them to a variety of stressors that are thought to be risk factors for physical and mental ill-health. They work shifts and have sporadic periods of intense psychological and physical work. There may, however, be long periods of physical inactivity, although the risk of physical injury is ever present. Prison officers, especially in maximum security prisons, generally work in highly constrained environments with low decision latitude. Significantly, environments of this sort have, across a range of occupations, been found to have a detrimental effect on both physical and mental health (Karasek and Theorell, 1990).

In a previous study (Dunne and Morrison, 1991) we found prison officers to be a relatively homogenous group of workers irrespective of the prison characteristics (e.g., security

level) in which they worked. Despite this homogeneity, significant differences were found between prison types in self reported physical and mental health. Similar results, using more objective physiological measures, have been reported by Harenstam, Palm and Theorell (1988). In each of these studies, it was found that, officers in minimum security prisons showed fewer signs of chronic exposure to occupational stressors, when compared to officers working in prisons with a higher security rating.

Differences in attitude between officers in different prisons have also been reported (Williams and Soutar, 1984). For instance, Those working in prisons with increasing levels of custodial control tend to have more negative attitudes towards inmates and non-custodial staff.

Some studies have also suggested that certain managerial strategies might be utilised to reduce job stressors in prisons. Indeed, where managerial styles are found to be participative (Lasky, Gordon and Srebalus, 1986) and supportive of prison staff (Harenstam et al, 1988; Webster et al, 1983), both attitudinal and adverse physiological reactions appear to be significantly moderated.

It appears, then, that all prisons are not the same and they have differential effects on the health and attitudes of those that work in them. Moreover, there is a growing body of research evidence which supports the argument that both job and organizational design factors influence the physical and mental well being of prison officers. Harenstam et al (1988), for example, have reported that understimulation on the job is

associated with a higher absenteeism rates for males, and high mean levels of cortisol (a physiological indicator of stress) and sickness among female prison officers. Dunne and Morrison (1991) have reported that perceptions of job demands, constraints and social supports also varied across security type and prison location (country vs metropolitan). Unfortunately, however, no direct analyses of the impact of these variables on aspects of health and well being were undertaken in that report. Further data analysis (Morrison et al., 1992), have revealed that the interaction between perceptions of job demands and negative affect was a good predictor of mental and physical health as well as job attitudes. The valence of these effects was, however, inconsistent and it is a further aim of this study to attempt to define the nature of such effects in greater detail. Unlike the previous study, we shall compare levels if strain in the prison officer population against samples from the wider community. In addition, the influence of job characteristics on specific physical symptoms will also be assessed.

The relationship between perceptions of the job environment and mental and physical health are, as we have already mentioned, commonly reported across a wide range of occupations and subject populations (e.g., Berger-Gross and Kraut, 1984; Billings and Moos, 1982; Buck, 1972; Jackson, 1983; Karasek, 1979; 1989; 1990; Payne and Fletcher, 1983). The work of Karasek (see Karasek and Theorell, 1990, for a thorough review) has been particularly influential in this field. He was one of the first to consider the interaction

between demands and discretion and its impact on well-being and has shown that although jobs at different levels in an organization may be perceived as being equally demanding by job incumbents, the incidence of stress-related illness is moderated by the level of job discretion. Those with higher constraints, or less job discretion, report greater mental and physical ill-health than comparable groups with fewer job constraints but the same level of perceived demands.

Since his early papers (e.g. Karasek, 1979) the job demands/discretion model has been subjected to considerable scrutiny. Various studies have considered such questions as: (i) how much of the variance in physical and mental illness do the combined effects for job demands and discretion account for? (Karasek et al., 1981); (ii) how generalisable are the effects? (Karasek et al., 1988; Payne and Fletcher, 1983); (iii) is the interaction between demands and job discretion additive or multiplicative? (Warr, 1977); (iv) are all job demands and aspects over which incumbents have control to be considered equal? (Karasek et al., 1988; Fletcher and Payne, 1982); (v) is the model comprehensive enough? (Fletcher and Payne, 1980a;1980b; Johnson, Hall and Theorell, 1990; Payne and Fletcher, 1983)

In general the job demands/discretion model has stood the test of time although some modifications to its original formulation have been made (see Karasek and Thoerell, 1990, for a recent summary). Social support, for example, is now thought to be an important third variable in the demands and discretion equation. Social support can attenuate the effects

of exposure to stressors (Griffith, 1985, Ullah, Banks and Warr, 1985; Kaplan, Robbins and Martin, 1983), but the effects are not consistent. Some studies (e.g., Thoits, 1982; Kessler, Price and Wortman, 1985) report that social supports have a general effect, suggesting that their influence is additive, whereas others argue for a multiplicative model (Parkes, 1990).

The influence of other variables which might also serve to attenuate the effects of occupational factors on health, such as social class (Fletcher, 1988), educational level (Hinkle et al., 1968) and personality traits (Payne, 1988) are also receiving some attention in the literature. It seems that such variables exert a strong attenuating (usually upwards) influence on the relationship between job attributes and commonly used outcome variables which rely on subjective reports (e.g. health complaints, job satisfaction, anxiety and depression). Level of education for example has been found (Hinkle et al., 1968) to be inversely related to indices of strain in work contexts. Those who have higher levels of education may not suffer the ill effects of exposure to work stressors because they have a greater variety of mental skills that can be applied to difficult problems. As such their educational skills are something they bring with them to the job and if you have them the job is easy, if you don't it is demanding.

Personality traits on the other hand pose quite a different problem. Although not exclusively the case, the individual difference that is currently receiving a great deal

of attention is that of negative affect (NA) (see Payne, 1988; Parkes, 1990; Watson and Clark, 1984). No single measure of NA has been developed but it variously measured by the Eysenck Personality Inventory Neuroticism scale (Eysenck and Eysenck, 1964), the Taylor Manifest Anxiety Scale (Taylor, 1953) and the State-Trait Anxiety Inventory (Spielberger, Gorsuch and Lushene, 1970), scores on the tension scale selected from the CAQ (Krug et al., 1980).

A number of issues have been raised by the inclusion of personality in the job design-strain equation. Not least of these is the suspicion that research which does not attempt to control for the effects of personality will systematically overestimate the impact of job design on general health (Brief, et al. 1988; Payne, 1988; Parkes, 1990).

For studies that rely on self reports as indices of both the independent and dependent variables the problem is twofold. First is the potentially biasing influence that certain personality characteristics have on processing incoming data from the environment. For example, MacLeod (1991) has shown that subjects high in trait anxiety may interpret emotionally neutral stimuli in an anxiety provoking manner. In the present context this might mean that two people may view the same job as being quite different in terms of perceived demands. The second problem, as Watson and Pennebaker (1989) point out, is that "health complaint scales likely assess at least two sources of variance, one is clearly health relevant and the other is more subjective and psychological".

Thus, the hitherto reported relationships between job design and well-being may be inflated due to the shared variance that exists between two variables that is due to negative affect. This essentially methodological problem is not new, and is widely recognised in health psychology (see Costa and McCrae, 1985, 1987). Inflated correlations between dependent and independent variables are especially problematic for studies that rely exclusively on self report measures. Watson and Pennebaker (1989) have shown that when objective, rather than subjective, indices of ill health are correlated with subjective measures of stress only very modest relationships are obtained. Negative affectivity (NA) on the other hand, correlates highly with self reports of physical health and not with objective criteria.

Fortunately, studies that have examined the accuracy with which self-report estimates of job characteristics are made, have been generally re-assuring (Glick, Jenkins and Gupta, 1986; James and Tetrick, 1986; Taber, Beehr and Walsh, 1985). Griffin (1983), for example reported correlations of between .65 and .75 between subjective perceptions of various job components (e.g. autonomy, task variety) and their objective manipulation.

Research that has examined the relationship between objective and perceived job components and work outcome relationships is similarly optimistic. Objective manipulations of job components do correlate with work attitudes such as job satisfaction (Griffin, 1983; O'Reilly and Caldwell, 1979) in a similar way to subjective assessments of the same variables,

albeit, in a more moderate fashion (Fried and Ferris, 1987). Thus, the problems associated with self-rated data may be less than might commonly be believed.

Finally, the practical utility of the job discretion and social support approach to job redesign would achieve wider acceptance if it could be shown that workers in single occupations, or working for the same organization, are likely to benefit from a redesign program. If there is a criticism to be levelled at Karasek's work, it is that the most convincing data in support of the model comes from populations of workers that are very heterogenous. Several researchers (e.g. Fletcher and Payne, 1982; Sutton, 1981) have failed to replicate the expected effects when focusing on a single category of workers. Such results may be no great surprise since, in theory, single categories of workers such as, for example teachers, all get roughly the same amount of discretion. What is needed, therefore, is data from homogenous groups of workers who work for a single organization but for whom there are significant differences in important job characteristics. Prison officers are such a population, and they are sufficiently numerous that even small effects of job characteristics on well being should be detectable.

Aims of this study.

This study has three principle aims: (i) To examine the relative position of prison officers with regard to mental and

physical well-being against the health of the general community; (ii) To further examine the impact of job demands, discretion and support on the physical and mental well-being of job incumbents. Our study is unique in that we are using an homogenous population of subjects (prison officers) for whom there is a substantial degree of diversity in each of the key job characteristics under investigation (see Dunne and Morrison; 1991); (iii) To further test the moderating influence of negative affectivity, reported by Morrison et al., (1992), on the relationship between perceptions of job characteristics, job attitudes and mental and physical well-being.

At the outset of the project we had no expectation regarding the health (or ill health) of prison officers. It has often been reported to us that officers do suffer from chronic exposure to stress-inducing situations such as the persistent threat of violence and the requirement of officers to "mingle" with prisoners in situations in which they perceive themselves to be outnumbered. Balanced against this situation, there are long periods of inactivity which may be considered to be stressful in other ways compounding the problems just described, or such periods may be used for "stress recovery". Either way, as a first step it seemed important to place stress in prisons into context by comparing officers well being against that of the wider community.

Our expectations regarding the effects of job design on well being and attitudes were, however, quite focussed. Specifically, it was expected that officers who perceive their

jobs to be high in demands and low in job discretion (high constraints) would suffer higher levels of strain. Furthermore, evidence of the truly interactive nature of these variables was expected to be revealed through significant multiplicative interaction terms. In addition, high levels of perceived social supports were expected to reduce the negative consequences of high demands and low discretion. Unfortunately, since the literature is divided concerning the nature of this effect, we find it difficult to specify, a priori, how social support will combine with the other job characteristics to influence the dependent variables. Thus, both main and interactive effects between this and the other variables of interest will be tested. Unlike previous studies, we will differentiate between social supports found at work and at home. Following Fletcher and Payne (1980) and Fletcher (1991), we expect to find work and non-work supports contributing additively to the variability in job-related strain.

Negative affectivity is used in the present study in two ways: (i) To statistically control for 'response bias' which would otherwise attenuate of the correlations between job perceptions and self reports of attitude and health; (ii) To examine the hypothesis that negative affectivity truly interacts with job characteristics to influence the dependent variables.

It is hypothesised that those high in perceived job demands and negative affect will show the highest levels of physical and mental health. This effect is anticipated because

of the heightened awareness and sensitivity that is said to be a characteristic of those high in NA. Using the same logic, it was not expected that a similar effect would be present between NA and job discretion. Jobs that are highly constrained may only affect those who actively seek more scope and autonomy; perhaps those high in positive affect. Such an effect must, however, be the subject of another study.

The sample:

Officers in every prison of a state in Australia were asked to participate in the survey. A total of 903 questionnaires were distributed, of which 410 were returned (45.4%), and of these, 393 (43.52%) were complete and suitable for statistical analysis.

This response rate is relatively low, although two points warrant comment. First, it is similar to response rates achieved by a previous survey by Morrison et al (1986-87) which received 49.3% and a the study of two New South Wales prisons by Webster et. al. (1983) which achieved 40.6% It is also very close to the response rate of 47.1% achieved by Posen (1986) in a study of officers in Holloway Prison, London. A central problem is that the return rate may not reflect the actual response rate. As Posen (1986) has reported, at any point in time up to 14% of officers are on extended leave. With this level of and absence, the response rate for the current study would then be well above 50%.

Second, there was a requirement of cooperation with the WA Prison Officers' Union that the questionnaire be entirely anonymous. Early in the study, it was hoped that non-returns could be individually followed up by direct mail, with contact being determined by non-returned code numbers. However, the issue of code number identification on questionnaires became a major concern. There were numerous complaints about the presence of these numbers, and approximately 25% of completed returns had the code number erased. In the majority of cases, the location of the prison could be identified by postmarks, but this was not possible for metropolitan prisons. A decision was made to continue the survey without individual codes for all officers, and therefore identification was by prison only. Hence, direct follow-up to encourage non-responders was not attempted. Rather, Union representatives at each prison were contacted after one month, and asked to remind members at the prison to return the questionnaires. More direct follow-up may have increased the overall response rate, but indirect follow-up was the best method available. In any event, the sample of 393 officers makes this the largest study yet conducted of prison officers in this country, and the response rate is comparable to other work.

METHOD

Questionnaire Design.

The sole method of investigation in this study was by questionnaire. Included in the instrument were three sections. One of these was concerned with gathering information from the officers with regard to work and non-work variables that might conceivably influence the dependent variables but which were not of principal concern in this study. These variables include a variety of biographical details (age, sex, level of educational attainment) current position in the Department of Corrective Services (e.g. rank and length of job tenure, prison of employment), the incidence of recent significant life events (Holmes and Rahe, 1967) and negative affect (described later).

We shall examine some of the above in more detail with regard to their association with various outcome variables. The major data analyses of theoretical relevance will attempt to assay the precise influence of job characteristics (demands, work and non-work supports and constraints) on the dependent variables.

The dependent variables used in this study were indices of life style such as family strain, physical and mental strain, work attitudes (e.g., general job satisfaction, organizational commitment), levels of absenteeism, medication and alcohol and nicotine consumption. Some of these require

more description and this is provided in the following sections. A copy of the questionnaire is included in APPENDIX A.

Job Demands Supports and Constraints

Individual perceptions of job characteristics were assessed via a modified version of the job demands, supports and constraints (job discretion) questionnaire developed by Payne (1979). Modifications were incorporated after individual discussions with a small sample of prison officers and administrators so that questions of particular interest to them could be included. No applicable independent reliability and validity coefficients are available due to the customised nature of this part of the questionnaire.

Level of job demands was determined from responses to 18 questions about the frequency (rated on a five point scale: very rarely to very often) of undertaking tasks under time pressure, insufficient training, or ambiguous administrative procedures, and items relating to the need to undertake courses for promotion.

Constraints and supports were assessed from a common set of 28 items relating to the type and amount of feedback that officers receive, the amount of perceived authority, perceptions about the sufficiency of other officers' skills and knowledge, and opportunities for promotion. Each item was rated on a four point scale (agree/disagree). Consistent with

the scoring procedure adopted by Payne (Payne, 1979; Payne and Fletcher, 1983), an item (e.g., "I feel I could probably rely on a colleague to help me if my work load became too heavy") with which officers disagreed (i.e., scored as three or greater) was scored as a constraint. A score of one was incremented for the supports variable if the respondent indicated a score of 1 or a 2 and a score of 0 otherwise.

Level of Constraint was determined by counting the number of responses indicating a 3 or a 4 and other responses were scored zeros. If items were worded in the reverse fashion, such that to agree with a statement indicated constraint, then, the scoring procedure was reversed (i.e., a response of a 1 or a 2 would increment total constraints scores by 1). In order to simplify the interpretation of interaction effects, the supports score was deducted from the total number of items (n=28). Phrased in another way, the higher the score on the supports variable the less support was experienced on the job.

In addition to job supports, support outside of the working environment was also considered. Specifically, this questionnaire attempted to examine the potential influence that out of work influences might have had on moderating the effect of work stressors. There were 10 items to this part of the questionnaire. These were generated following discussions with officers, as well as our knowledge of the research literature. Essentially, the items attempted to tap into the quality of leisure time which has often been thought to be an important attenuator of work stressors.

Negative Affectivity

Negative affectivity was assessed from the Tension/Strain factor of the Clinical Analysis Questionnaire (CAQ). This is one of the non-clinical factors that was initially developed for the Sixteen Personality Factors Questionnaire (16PF) (Cattell, Eber and Tatsouka, 1970). High scorers on this scale report that "...they take a long time to calm down when they are upset. They are irritated by small things. They have difficulty sleeping and get angry with people too quickly." (Krug et al., 1980:p 17). Scores on this scale, thus, may be thought of as being akin to trait anxiety. Additional evidence for this is provided by the fact that scores on this scale have the highest factor loading on the second order anxiety factor, derived from the CAQ. This measure is known to be highly reliable (test-retest r=.73).

In recent times it has become important to include measures of this type in studies such as the present one. It has been suggested (e.g. Payne, 1988) that individuals high in negative affectivity have a bias to over-reporting the negative perceptions of both jobs and health. Thus, by including a measure of this type, such predispositions can be statistically controlled.

Physical Health

The general physical health index was developed from a

study reported by Cheek and Miller (1983), and a health census conducted by the Australian Bureau of Statistics (1983). This part of the questionnaire contained twenty five items concerning a wide range of illnesses from the common cold, to the incidence of peptic ulcers, hypertension and heart disease. Officers were required to indicate which of the various health symptoms had occurred both during the two weeks prior to completing the questionnaire, and over the past year.

Respondents were also asked about the medications that they had taken during the previous two weeks and over the past twelve months. In addition, the number of times they had visited the doctor, and the length and number of any stays that they had in hospital during the past twelve months was recorded. Finally, a single question asked the officers to estimate, from the total number of days that they had been absent from work, how many were due to: stress at work, everyday illnesses, serious illness, work induced and non-work induced injury.

Mental Health

Mental health was assessed via selected scales from the Clinical Analysis Questionnaire (CAQ)(Krug et al., 1980). Mental health scales of state anxiety and depression were chosen. Scales relating to these particular mental states were selected because of their relationship to specific job characteristics (demands and discretion) as reported by

Broadbent (1985). These scales are known to be highly reliable (test-retest reliabilities range from .65 to .85).

In addition to the above, the 12 item version of the General Health Questionnaire (GHQ) (Goldberg, 1972) was also included in the survey. This measure samples the extent to which the officers are currently experiencing minor psychological disturbances. This questionnaire was developed to measure symptoms of psychological disturbance and related physical complaints. When answering these questions, participants are asked to indicate their responses to questions such as " Have you recently lost much sleep over worry?". The psychometric properties of the GHQ12 have been investigated by, among others, Banks et al., (1980). It is reported to have high internal consistency (alpha=.82-.90), and possesses unidimensional factor structure. Its predictive validity, sensitivity, and specificity, is also reasonably impressive, with typical correlation coefficients around .7 being reported.

All of the measures of mental health used in this part of the questionnaire have been extensively normed. Hence, it will be possible to compare scores against that of a wider population.

Work Attitudes

Organizational commitment was measured via the 15 item Organizational Commitment Questionnaire (OCQ) of Mowday, Steers and Porter (1979). Job satisfaction was assessed via

the facet job satisfaction scale (JSQ) developed from O'Brien and his associates (O'Brien and Dowling, 1980). In each case, officers are requested to indicate the extent they agree with various statements about their jobs on a seven point scale. As with the measures of mental health, a major advantage of these questionnaires is that there are norms against which the prison officer population can be compared. In both cases, the psychometric properties of the scales are acceptable, as they are both high in internal consistency (OCQ = .9; JSQ = .91), and although the test re-test reliability of the JSQ is unknown, it has been found to vary between .53 and .75 for the OCQ. The convergent validity of the JSQ is, however, reasonably strong, with a correlation of .74 between it, and the total satisfaction scale of the Job Descriptive Index (Smith, Kendall, and Hulin, 1969). Similar levels of convergent validity are also reported for the OCQ and other measures of organizational attachment (Mowday et al., 1979). Finally, the behavioural consequences of low satisfaction and commitment are such that they have been implicated with various behavioural outcomes such as the intention to quit, absenteeism and performance. However, the evidence for the last of these is rather weak (Griffin and Bateman, 1986)

Life Style

In this category of dependent variable, questions relating to out of work behaviour were asked. These included

items relating to stress related behaviours such as the frequency and volume of alcohol consumption, and the number of cigarettes smoked. In addition, the "carry over" effects of the officers' jobs on their family were assessed via a seven item questionnaire. Included here were questions relating to: the amount of time spent with the family; the effect of involvement at work on family loyalty; tiredness at home after work; the effect of taking problems at work back to the family; guilt about time spent with the family; ease of relaxation; and perceptions of the effect of the job upon family strain.

PROCEDURE:

A proposal was put to the Prison Officers Union, and the Department for Corrective Services to conduct the study. The questionnaire and study design were discussed at a Union state council meeting, and permission was granted to distribute the questionnaire throughout the state. The conduct of the survey was then advertised in the Union newsletter. All but two prisons were visited by the project officer. The nature of the survey was discussed with officers on site, and questionnaires were distributed. In the case of the prisons not visited, the survey was discussed with union representatives by telephone, and questionnaires were mailed to officers. All packages contained reply-paid return envelopes and an explanatory

letter.

After a period of four to five weeks, the project officer contacted each union representative, and asked that the officers be encouraged to return the questionnaires.

RESULTS

Sample Characteristics.

As mentioned above, 391 prison officers completed useable questionnaires. Of these 120 (30.5%), came from each of the maximum and medium security prisons, and the remainder from the prisons with a minimum security rating (n=153, 38.9%). The majority of the respondents were male (n=348, 88.5%) which is roughly in accordance with what would be expected based on the relative numbers of each sex that working as prison officers during 1990 (male n=348; female n=43). The mean age of the total sample was 42.33 years (standard deviation=7.97 years), with the average length of service being 9.51 years (standard deviation=5.99 years). The level of previous education and training was varied: 119 officers (30.7%) had completed year 10 or less; 95 completed years 11 or 12 (24.5%); 130 had some form of technical training or trade (33.5); 44 had tertiary qualifications (11.3). Finally, the breakdown of respondents by rank is as follows: 18 Probationary Officers (4.6%); 192 Shift Officers (48.9); 60 First Class Prison Officers (15.3);

66 Industrial/Other Officers (16.8); 56 Senior Chief Officers (14.2). Tables 1a, 1b and 1c show these same figures broken down by sex and prison type.

		MAX	MED	MIN
MALE	N	111	94	143
	AGE	43.20 SD= 8.48	41.34 SD= 8.34	43.64 SD= 6.96
	Job Tenure (yrs)	9.69 SD= 6.40	9.58 SD= 6.08	11.02 SD= 5.31
FEMALE	N	8	26	9
	AGE	38.50 SD= 7.25	36.13 SD= 6.95	41.75 SD= 7.09
	Job Tenure (yrs)	2.38 SD= 2.72	4.35 SD= 3.52	4.78 SD= 3.15

Table 1a.: Sample characteristics by sex and prison type.

		MAX	MED	MIN
	ED.LEVEL			
MALE	Yr 10	29	26	47
	Yr 11/12	28	26	27
	Tec/Tde	39	33	50
	Tertiary	15	8	16
FEMALE	Yr 10	5	8	4
	Yr 11/12	1	10	2
	Tec/Tde	2	3	3
	Tertiary	-	5	-

Table 1b.: Level of education by sex and prison type.

	RANK	MAX	MED	MIN
MALE	Probation	3	8	-
	Shift Off.	67	41	59
	1st Class.	13	13	29
	Industrial	17	21	25
	Sen/Chief	11	11	30
FEMALE	Probation	2	4	1
	Shify Off.	5	14	6
	1st Class	-	4	-
	Industrial	-	3	-
	Sen/Chief	1	1	2

Table 1c.: Rank of respondents by sex and prison type.

Prison Officer Health and Work Attitudes in Context.

For the results of this survey kind to have any meaning, they must be set in a wider societal context. In the present study, wherever possible, survey instruments were selected where there were normative data available against which the scores of the sample population could be compared. For the responses to the mental health questions (GHQ, Anxious Depression, Tension, Low Energy Depression, Boredom/Withdrawal, Agitation) and those of work attitude (Job Satisfaction and Organizational Commitment), this was a relatively straight forward exercise. For the physical health items, we were able to make comparisons of the incidence rates for each illness, by reference to the data collected by the Australian Bureau of Statistics as part of its Population Health Census (1983).

Work Attitudes

On comparing the prison officer sample against the norms provided by Mowday et al. (1979) and O'Brien and Dowling (1980), it was found that the officers were significantly less committed to working for the Department of Corrective Services (Officer mean=3.35; Norm mean=4.5, Z=21.37, P<.0001), but no more or less satisfied than the average Australian worker (Officer mean=3.71, Norm mean=3.74).

Mental Health

Responses to the GHQ12 were analysed first and were initially scored in the following way. The scale onto which they must respond has four points: (i) not at all (ii) no more than usual (iii) rather more than usual (iv) much more than usual. Either of the first two responses are scored as '0' and the last two as '1'. The number of '1's is then totalled to give a GHQ score. A score of between 0 or 1 indicates no disturbance, 2 or 3 indicates mild to moderate disturbance and 4 or more as high or severe disturbance. The mild to moderate category is likely to represent people's responses to temporary problems, whereas a score of 4 or more indicates a degree of disturbance that might warrant professional assistance or treatment. Once the data have been scored in this way, it is then possible to compare scores with norms provided by the National Heart Foundation of Australia (1983).

Tables 2a and 2b show the frequency and percentages of prison officers falling into three categories of psychological disturbance as measured by responses on the GHQ. The most striking feature of the data is that male officers are over-represented in the high disturbance category. Statistical analysis revealed that this effect was highly significant. The same pattern of results is not apparent for the female officers when compared against data for the general population.

No differences between the males and female officer population were apparent from statistical analysis of the data. This latter result may seem to be somewhat contradictory with the previous analyses, however, it should be noted that the normal disturbance level for females in general, tends to be slightly higher than that for males, and hence, the null result from the test of statistical association.

Psychological Disorder Score			
	Low or no disturbance	Mild to mod. disturbance	High disturbance
NHF Male Sample (n=3740)	2815 (74.7%)	514 (14.2%)	411 (11.1%)
Prison Officers (Male) (N=348)	217 (62.4%)	46 (13.2%)	85 (24.4)
X^2=54.47, df=3 p<.001			

Table 2a. Comparison of General Health Scores for Male Prison Officers and a sample of Males from the wider community.

Psychological Disorder Score			
	Low or no disturbance	Mild to mod. disturbance	High disturbance
NHF Female Sample (n=3875)	2731 (69.8%)	522 (13.6%)	622 (16.6%)
Prison Officers(Female) (N=43)	30 (69.8%)	7 (16.2%)	6 (14.0%)
X^2=0.00, df=3 p>.1			

Table 2b. Comparison of General Health Scores for female Prison Officers and a sample of females from the wider community.

Selected Mental Health Components From the CAQ

As described previously, selected scales from the CAQ were also used to assess the mental health of the prison officer sample. In the tables below, male and female officer scores are compared against the norms reported by Krug (1980).

The results revealed that male prison officers scored significantly higher than what would be expected from a random sample of the general population for the Low Energy Depression, Boredom/Withdrawal and Tension scales. Scores on the Anxious Depression scale were similar to those in the wider community. The pattern of results for female officers was quite different to that of the males in that they scored significantly less than would be expected for a random sample of the general population for the Low Energy and Anxious Depression scales, and were no different from what would be expected for scores on the Tension and Boredom/Withdrawal scales. The only common result between the males and females was for levels of Agitation which were significantly less might be expected based on the the normative data.

So far, the general conclusion from this section is that the male prison officers seem to be showing signs of mental strain, whereas by contrast, female officers are not. The one area in which the male officers seem to do better than the general population is with regard to levels of agitation. On closer inspection of the scale description provided by Krug (1980) the interpretation of this result is less optimistic:

> "..this dimension first appeared in studies of depression....later attempts to locate it within the broader second-order Depression factor have been unsuccessful (Cattell, 1973; Krug and Laughlin, 1977). If anything, *the connection appears to be negative* [italics added] (Krug and Laughlin, 1976)." (Krug et al., 1980:p18)

MALES (N=348)			
	Prison Officers	Normative Data	Z-Test
Agitation	9.45	12.39	-14.16**
Boredom/Withdrwl	6.21	4.47	8.45**
Low Energy Dep.	7.49	6.31	3.73**
Anxious Dep.	5.77	5.98	.22
Tension	7.64	6.79	4.56**
Z=>2.57, P<.01**			

Table 3a. A comparison of male Prison Officer and general community (male) scores on sub-scales of the CAQ.

FEMALES (n=43)			
	Prison Officers	Normative Data	Z-Test
Agitation	7.67	10.97	-6.47**
Boredom/Withdrwl	4.79	4.86	0.12
Low Energy Dep.	6.00	9.00	-3.03**
Anxious Dep.	4.23	8.17	-6.18**
Tension	6.95	7.89	-0.94
Z=>2.57, P<.01**			

Table 3b. A comparison of female Prison Officer and general community (female) scores on sub-scales of the CAQ.

Physical Health

The physical health of the prison officer population can also be compared with that of the general population with reference to the Australian Health Survey (1983). Although the data presented in the health census is divided by sex, it is

not simultaneously segregated by age. That is, when the relative illness rates are given for each sex, age is ignored. Thus, faced with a choice to ignore sex, or age, as a variable in the analysis, it was decided to ignore sex for the reason that between age variability seemed to be greater than the variability between the sexes. As a result the incidence rates for the illnesses reported below are the average rates across three age groups spanning ages 15-64, ignoring any minor sex difference. All of the prison officer population falls in this age range.

Table 4 shows the incidences (per 1000 head of population) for various illnesses that occurred in the two weeks prior to data collection, for the general and prison officer populations. The general pattern of results indicate that the prison officer population shows a marked elevation of health symptoms for eight out of the fifteen categories depicted in the table. Symptoms with incidence rates in excess of 5% over and above the general population (representing an incidence rate differential in excess of 50 cases in 1000) were observed for the following: Virus (15.9%), Insomnia (22.8%), Migraine (10.3), Hearing Problems (8.7%), Back Problems (14.9%), Chest Pains (5.4%), and Dizziness (6.2%). Inplacing these figures in context, it must be considered that officers may have over-reported their symptoms. For example, there seems to be no plausible explanation as to why such a large discrepancy should exist in the incidence of hearing problems. However, if a general response bias does exist, it could be argued that it would be evident across the range of

all possible symptoms, which it clearly is not for these data. Instead, using our arbitrarily determined criterion, the most noteworthy differences between the study sample and the general population exist mostly for acute, rather than chronic conditions.

	Illness Rates Per 1000	
SYMPTOM	Prison Officers	Gen. Population
Virus (Cold/Influenza)	218.4	96.3
Hypertension	83.3	67.5
Hay Fever	66.1	18.6
Insomnia	250.0	22.4
Migraine	123.5	19.7
Ulcers	20.1	7.9
Hearing Problems	92.0	5.2
Back Problems	178.2	28.6
Arthritis	66.0	37.5
Chest Pain	54.6	0.8
Heart Disease	8.6	18.17
Asthma	25.8	17.5
Kidney Trouble	8.6	4.4
Skin Trouble	106.3	95.7
Breathing Trouble	63.2	80.0
Dizziness	63.2	1.7

Table 4. The incidence rates of health symptoms occurring in the two weeks prior to participation for prison officers and a sample of the wider Australian population (age range 16-65).

Medication Taken in the Last two weeks.

Table 5 depicts the types of medication taken by the prison officers during the two weeks prior to completing the questionnaire. Surprisingly, given the data reported in the previous table, the level of medication consumption for the study sample does not appear to be markedly different from that of the general population. Indeed, in cases such as pain relieving drug consumption, the wider community shows a remarkably higher level of usage. The most noteworthy feature of these data, which is consistent with the broad picture of ill-health among the prison officers, is that 69.5% of the officer sample used some form of medication in the two weeks prior to questionnaire completion, compared to 57.5% of those in the wider community.

Finally, to complete the examination of prison officer health, respondents were also asked to indicate if they had an episode in hospital during the previous year. Prison officers had more than twice the number of hospital episodes than the wider population. The reasons for the hospital stays was not explored in either the Australian Health Survey, or the prison officer population studied here. Thus, these data are limited to the extent that they provide only a very crude estimate of illness severity and contribute to a picture of prison offiicers appearing to be less healthy than persons in the general population.

Medication	% Prison Officers	% Gen. Population
Pain Relievers	7.8	34.3
Cough/Cold Medicines	8.3	6.1
Allergy Tablets	2.1	3.3
Skin Ointments	4.5	6.7
Stomach Medicines	3.7	3.7
Tranquillisers	0.8	3.1
Sleeping Pills	4.5	4.6
Vitamins	13.1	20.7
Heart/BP Medicines	8.3	9.4
Other	16.3	9.0
No Medicines	30.5	42.5

Table 5. Percentage of Medication Consumption in the two weeks prior to completing the questionnaire.

Stays[1] in Hospital	Prison Officers	Gen. Population
Percent >= 1 stay	33.8	14.7

Table 6. Percentage of the General and Prison Officer populations who have has at least one stay in hospital in the past 12 months.

Discussion of Attitudes, Mental and Physical Well-Being

The results of the mental and physical well-being data broadly indicate that the prison officer population is exhibiting signs of strain when compared to samples taken from

[1] Includes visits not requiring overnight stays.

the wider community. These effects appear to be particularly pronounced for measures of mental well being. The officers also revealed that their level of commitment to the Department. of Corrective services is less than the commitment of the average Australian employee to their employer. When the sex of the responding officers was taken into account, it was found that general and specific indices of mental health were lower for male officers (i.e., they exhibit more strain).

In keeping with the evidence that the subject population showed lower levels of mental health, the data for physical health showed a generally similar trend. It is possible to speculate that such consistency is the result of a general response bias on behalf of the prison officer population. In support of this argument one can point to the voluminous research literature which is a testament to this interpretation (see Costa and McRae, 1985). However, one would expect that such a response bias would simply add a constant across all possible health symptoms rather than a clever selectivity which one would have to argue in the present case. It is also surprising, and somewhat contradictory, that medication consumption was not markedly different, and in some categories lower, then the general population.

One observation, which is perhaps worthy of further investigation, is that the majority of health related symptoms where an elevation was found for prison officers, related to acute rather than chronic illnesses (i.e., things that will get better in the short term). Whether there is a causal relationship between mental and physical health (with the

former causing the latter) is a matter for speculation, and cannot be resolved by the data collected here. The link between psychological stress and ill health for different classes of disease has yet to be fully examined and demonstrated by the by the academic community although the available evidence is highly suggestive (Fletcher, 1991).

Having established that there is a prima facie case for the assertion that prison officers are a relatively "stressed" population, it remains to be determined whether the job is responsible for this stress. In the following sections this hypothesis will be examined.

Differences between Prisons

Dependent Variables. In order to examine the effect of prison security classification on all of the dependent variables, a series of unweighted means analyses of variance were conducted for each dependent variable. These analyses revealed that prisons were surprisingly similar on most of the measures of mental well-being, and no difference in scores on the Tension scale was found between prisons. Indeed Job Satisfaction was the only variable for which a significant difference was apparent (Max=3.55, Med=3.87, Min=3.71 $F=3.562$, df 2,389, $p<.03$). Post hoc analysis using the Neuman-Keuls test revealed that this main effect was due to a difference in levels of job satisfaction between maximum and medium security prisons. However, the latter effect must be interpreted cautiously due

to the large number of analyses that were conducted. In other wrds it is possible that, although statistically significant, this result may itself have occurred by chance.

Differences in the incidence of physical health symptoms across prisons was analysed next. For this analysis, health symptoms over the past year (including the previous two weeks) was examined across prisons. In keeping with the work attitude data, it appears that those officers working in the medium security prisons were healthier than were officers working elsewhere. Specifically, officers in medium security prisons reported having fewer colds/flus (X^2=7.83, df=2, P=.020), less high blood pressure (X^2=17.445.132, df=2, P<.001), and fewer hearing problems (X^2=10.135, df=2, P<.01).

Job Characteristics

Similar analyses to those described above were also conducted to determine if officers varied across prisons with regard to perceptions of their jobs. Firstly, the variables from the extended Karasek model were considered. Both support at work (worksup) (F=4.488, df 2, 366, p=.012), and levels of constraints (constr) (F=5.012, df 2, 366, p<.01), were found to vary significantly across prisons. Again, post hoc comparisons between prisons were undertaken via the Neuman-Keuls test. These analyses revealed that the officers in the medium security prisons perceived themselves as having higher work support, and lower levels of constraint than officers in

either of the other two prison types (Max=14.62, Med=16.64, Min=14.94 for work support; Max=11.69, Med=9.41, Min=11.23 for constraints). No significant effects between prisons were found for either job demands or levels of support outside of work.

Differences Between Male and Female Officers

Dependent Variables. Differences between male and female officers were examined for each of the dependent variables. A number of significant differences were found between the two groups on both indices of health, and perceptions of job characteristics and components. Differences in work attitudes and physical and mental health as a function of gender can be seen in Table 7. From this it can be seen that the health and attitude of males was significantly worse than those of the females. Not only were the male officers less physically and mentally healthy, but they were also less satisfied with their job, and less committed to working for Department of Corrective Services.

Concomitant with the health and attitude differences between the sexes, there were also sex differences in the way that the characteristics and components of the job were viewed. Males perceived their jobs to be more demanding, more constraining, and containing less support at work. However, no differences in out-of-work support were found between the sexes.

VARIABLE	MALE	FEMALE	DF	T
GHQ[2]	23.48	21.65	389	2.50*
Job Sat	3.64	4.22	388	-3.89***
Org Com	3.26	3.98	380	-4.39***
Agitation	10.44	8.67	382	2.73**
AnxDep	11.77	10.28	379	2.90**
B/Withdwl	12.21	10.79	387	2.44*
Phys Hlth	5.99	4.78	389	2.58**
Blame	2.14	2.38	373	-2.15*
*P<.05 **P<.01 ***P<.001				

Table 7: Gender differences for each of the dependent variables.

	MALE	FEMALE	DF	T
Demands	3.01	2.72	388	2.54*
WkSupps	13.01	9.77	365	-3.49**
Constrnt	11.19	7.87	365	3.40**
* P<.05 ** P<.01 *** P<.001				

Table 8: Gender Differences in perceptions of Demands, Supports and Constraints

[2] The statistical difference between males and females on this occasion is due to the scoring method applied to the GHQ. Here we have used the likert approach rather than the binary method. The former is more data efficient. See Banks et al. (1980) for a full discussion.

PRELIMINARY DISCUSSION OF DIFFERENCES BETWEEN PRISONS

No differences in mental health status between prisons was revealed by the data. This result is in contrast to the results from a smaller sample reported by Dunne and Morrison (1991) who found that officers working in minimum security prisons were psychologically healthier. The current study found differences between prison types in work attitudes (job satisfaction) and physical health. The most satisfied officers, and those who suffered least physical ailments worked in the medium security prisons. Regarding perceptions of job characteristics, those in the medium security prisons perceived themselves as having more support at work and being subject to fewer constraints. In many respects these results mirror those from the previous study of Dunne and Morrison (1991) except that it is now the officers in the medium security prisons who are "better off".

In one sense the data are encouraging in that, when the present and earlier studies are compared, those who view their jobs in a more positive light tend to be healthier and more satisfied. The unexpected aspect of the data is that it is not the officers working in the minimum security prisons who are the beneficiaries of more favourable working conditions as was reported in the previous study. How are we to account for the between study inconsistencies? One possibility is that the sample population in this study is more comprehensive than that of the previous work. For example, the current study contains officers from maximum security prisons who also live

in the country. The interpretation of the data from the previous study was hampered by a confounding of prison location and level of security. Additional analyses, to those described above, were therefore conducted using only those prisons that had been included in the earlier work. No change in the pattern of results was observed.

The possibility was also explored that the observed gender differences are a function of the different prison types in which male and female officers worked. This was done by a series of two factor hierarchical analyses of variance (prison type x gender). In each case the effects of prison type were partialled out of the analysis, prior to the gender effect being evaluated. However, these analyses did not prove to be fruitful in reducing any of the previously observed gender effects.

A final option, is that the prisons themselves have changed since we first undertook to survey prison officers and the survey instrument has simply been sensitive to such changes. At the time of the previous survey, the philosophy of prisoner management commonly referred to as "Unit Management" was in the beginning stages of implementation. At the time of the present survey, unit management was further advanced in its implementation and more regular patterns of work and expectations had been established. However, acceptance of the new approach was somewhat mixed. Evidence for this was given to us informally by the scepticism voiced by numerous officers, from various prisons, during the data collection phase of the the study. It is possible that individual

officer's experience of the changes was less in some prisons (perhaps those ranked higher on the work supports variable) than in others.

To this point the sample characteristics have been described in some detail. In the analyses that follow, the interrelationships between perceptions of job characteristics and components and their impact on the array of outcome variables used in this study will be presented.

Job Characteristics, Work Attitudes and Mental and Physical Well-Being.

In order to assay the effects of job characteristics, their interaction, and the influence of negative affectivity, the data were subjected to a series of regression analyses using the SPSSX statistical package. In these analyses the variables were entered using the following method. To begin with, a series of control variables were entered as a block. These included variables relevant to various aspects of demography (e.g., age, sex, marital status, and level of educational attainment), negative affectivity (i.e., scores from the tension scale of the CAQ), non-work related stressors (i.e., life events) and, in the present context, non-relevant work variables (e.g., rank, length of service and prison type). Next, the job characteristics variables (i.e., demands, work and non-work supports and constraints) were allowed to enter the analysis in a forward stepwise fashion. Finally, the

interactions between job characteristics and negative affect were entered last. Interaction terms were derived from the cross-products of relevant variables. As with the previous step, these variables were entered using a forward stepwise procedure. In each case the criterion for entry was that the variables should make a significant contribution to the equation at the .05 level of significance. The analytical procedure adopted for the last step was selected because we had no a priori expectation concerning the relative importance of the predictor variables and the magnitude of their interrelationship. The summary statistics for these analyses are presented in Table 9, with brief descriptions of the major points of note given in the text below.

Mental Health Variables

Control Variables. Among the control variables, scores on the Tension scale were the most frequent predictor of the dependent variables, with the only exception being the Boredom/Withdrawal variable. Furthermore, in each case the valence of the relationship was positive. Thes results therefore suggest that, as reported in the wider health research literature, negative affect is statistically associated with other mental health symptoms. Based on this finding, the possibility that mental health symptoms have been exaggerated by the sample cannot be ruled out since no independent assessment of mental health was carried out in the

present study.

Rank also featured as a variable that made a significant contribution to scores on four out of the five indices of mental health. Specifically, for levels of Agitation, Anxious Depression, Low Energy Depression and GHQ scores, an inverse relationship was evident. Thus, officers of higher rank were relatively more healthy than their subordinates. Sex of the officer was also found to make a significant contribution to the regression equation for agitation and anxious depression scores. Female officers were found to score less than their male counterparts in each case. Such results simply re-confirm those discussed previously. Elevated levels of Boredom and Withdrawal, and Low Energy Depression were predicted in a positive manner by job tenure and finally, scores from the Life Events Inventory predicted GHQ, and Low Energy Depression. In each case this relationship was found to be positive, indicating that as might be expected, more severe life events have a negative impact upon mental health.

The importance of these results is primarily that they indicate the diverse and complex influences on the dependent variables of interest in the present study. As a consequence it is important that they be controlled, experimentally or statistically, when attempting to distil the precise effects that job characteristics might have had on well-being.

Effects of Job Characteristics

Once the influence of non-work relevant variables were statistically controlled, the next stage of the analysis considered the effects of officers' job perceptions in terms of demands, supports and constraints. In addition to these variables, as discussed earlier, the buffering influence of "out of work supports" on mental health was also examined.

Work and non-work supports were the most frequently found predictors of the mental health variables. In each case, lack of support was found to have negative consequences for mental health (recall these variables have been reverse scored which accounts for the positive beta weights). Supports outside of work, or rather lack of them, were found to make a significant contributions to all of the indices of mental health. Furthermore, perceived lack of support at work was found to adversely affect GHQ and Low Energy Depression scores.

Finally, only one effect of job demands was found from these analyses. In this instance, those perceiving their jobs as more demanding suffered higher levels of Low Energy Depression.

Interaction Effects

In addition to the effects discussed above, three first order interaction effects were found for Agitation and

Boredom/Withdrawal scores. In each case a common theme was that negative affectivity acted as a moderator. Firstly, for Agitation levels, those high in negative affect, and who perceived their jobs as being constraining, scored more highly on this dimension. Secondly, those who perceived off-the-job supports as being high, and who were also high in negative affect, scored highly on the Agitation scale. While these results appear to be somewhat contradictory, the problem may lie with the ambiguous nature of the Agitation factor itself, rather than with the independent variables. This issue has already been raised above, and the reader is referred back to page 28 for further clarification. Finally, those who perceived their jobs as being more demanding, and who were also high scorers on the Tension scale, showed higher levels of Boredom and Withdrawal.

TABLE 9. Summary Statistics for the mental health variables[3]

Dependent Variable.. General Health Questionnaire

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.949461	.086053	.485750	11.033	.0000
AGE	.015826	.036845	.022470	.430	.6678
EDLEVEL	-.013372	.225370	-.002422	-.059	.9527
SEX	-.915141	.764471	-.051085	-1.197	.2321
TOTLEI	.636276	.145622	.186687	4.369	.0000
RANK	-.525769	.203778	-.110880	-2.580	.0103
LONGWORK	.031592	.053239	.033742	.593	.5533
WORKSUPP	.121793	.043193	.120833	2.820	.0051
OTHERSUP	.094785	.045968	.089522	2.062	.0399
(Constant)	11.676938	2.131120		5.479	.0000

Mult R.=.6735 R.Sq=.4536 Adj. R.Sq.=.4395 F= 32.193 P=.000

Table 9 Contd.

Dependent Variable. Agitation

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.901397	.218425	.645317	4.127	.0000
AGE	-.041138	.027302	-.081733	-1.507	.1328
EDLEVEL	-.002170	.168061	-5.500E-04	-.013	.9897
SEX	-1.431780	.568755	-.111843	-2.517	.0123
TOTLEI	-.014848	.108813	-.006096	-.136	.8915
RANK	-.305755	.152401	-.090231	-2.006	.0456
LONGWORK	.007706	.039519	.011518	.195	.8455
CONSTR	-.151262	.104813	-.220259	-1.443	.1499
OTHERSUP	.414559	.111784	.547895	3.709	.0002
TENXOTH	-.032061	.010733	-.674321	-2.987	.0030
TENXCONS	.026799	.010535	.498425	2.544	.0114
(Constant)	2.797762	2.455809		1.139	.2554

Mult. R=.6452 R.Sq.=.4163 Adj.R.Sq.=.3978 F=22.497 P=.000

[3] A glossary of all terms for the independent variables included in the regression analyses can be found in APPENDIX B.

Dependent Variable.. Anxious Depression

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.420768	.055269	.377398	7.613	.0000
AGE	.031044	.024128	.077272	1.287	.1991
EDLEVEL	-.260309	.147648	-.082651	-1.763	.0788
SEX	-1.152605	.495842	-.112801	-2.325	.0207
TOTLEI	.029496	.095017	.015172	.310	.7564
RANK	-.335108	.133291	-.123898	-2.514	.0124
LONGWORK	.018254	.034743	.034181	.525	.5996
OTHERSUP	.098510	.029882	.163115	3.297	.0011
(Constant)	7.186240	1.369137		5.249	.0000

Mult.R=.5263 R.Sq.=.2770 Adj.R.Sq.=0.2605 F=16.764 P=.000

Dependent Variable. Low Energy Depression

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.892878	.069752	.499542	12.801	.0000
AGE	-.037809	.029611	-.058704	-1.277	.2025
EDLEVEL	.124707	.181315	.024699	.688	.4920
SEX	-.096964	.612558	-.005919	-.158	.8743
TOTLEI	.402990	.118297	.129303	3.407	.0007
RANK	-.646751	.166300	-.149156	-3.889	.0001
LONGWORK	.104914	.042625	.122540	2.461	.0143
OTHERSUP	.169841	.036766	.175419	4.620	.0000
WORKSUPP	.417046	.137319	.452473	3.037	.0026
DEMANDS	.040699	.016063	.108358	2.534	.0117
SUPCONS	-.012297	.005073	-.358813	-2.424	.0159
(Constant)	-1.813078	2.020741		-.897	.3702

Mult. R=.7651 R.Sq.=.5853 Adj.R.Sq=.5722 F= 44.525 P= .000

Dependent Variable. Boredom/Withdrawal

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.017710	.218833	-.014057	-.081	.9355
AGE	-.012580	.023361	-.027711	-.538	.5906
EDLEVEL	-.146979	.143755	-.041299	-1.022	.3073
SEX	-.129618	.485056	-.011226	-.267	.7895
TOTLEI	-.051162	.093042	-.023290	-.550	.5828
RANK	-.240256	.130855	-.078610	-1.836	.0672
LONGWORK	.095400	.033807	.158085	2.822	.0050
OTHERSUP	.206221	.029153	.302181	7.074	.0000
WORKSUPP	.090620	.031028	.139487	2.921	.0037
DEMANDS	-.056069	.039325	-.211789	-1.426	.1548
TENXDEM	.008582	.003881	.556801	2.211	.0277
(Constant)	6.916200	2.431832		2.844	.0047

Mult. R.=.6897 R.Sq.=.4756 Adj.R.Sq.=.4590 F=28.613 P=.000

Physical Health

The physical health problems experienced by the prison officer population were examined in a variety of ways. First we considered the level of reported illness. In addition, we also collected data with regard to days absent from work and other health related behaviours, such as the number of medicines consumed, visits to hospital and length of stay in hospital. All of these variables were analysed in the same way as previously described for indices of mental health.

The total number of physical health problems were broken down into two categories: (i) illnesses that had occurred during the two weeks prior to completing the questionnaire and, (ii) illnesses that had occurred over the past year. Only two of the control variables were found to make any contribution to the regression equations and their influence was limited to the number of illnesses that had occurred over the past year. In each case, higher Tension and Life Events Scores were related to more ill health.

The influence of job characteristics on health was primarily related to perceptions of job demands, although the nature of the relationship varied depending on the time frame being examined. In respect of illness occurring over the previous year, for example, those who perceived their jobs as being more demanding suffered more illness, whereas for the number of illnesses experienced in the two weeks prior to completing the questionnaire, the relationship was reversed. This latter result must, however, be interpreted in the

context of the significant interaction between perceptions of job demands and scores on the Tension scale. Those who perceived their jobs as more demanding and who had higher tension (TENXDEM) scores experienced more illnesses in the recent past.

Finally, lack of support outside of work (Othersup) was found to exert a negative influence (recall this variable is reverse scored) on health over a 12 month period, but not in the shorter term.

Table 10. Summary results for the regression analyses concerned with the incidence of health symptoms.

Dependent Variable. Number of illnesses during the Last Year

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.243227	.058285	.230601	4.173	.0000
AGE	-.027238	.024887	-.071667	-1.094	.2745
EDLEVEL	.222697	.152737	.074742	1.458	.1457
SEX	-.437734	.514186	-.045283	-.851	.3952
TOTLEI	-.049985	.099106	-.027179	-.504	.6143
RANK	-.163097	.139315	-.063741	-1.171	.2425
LONGWORK	.034627	.035889	.068537	.965	.3353
DEMANDS	.033086	.011927	.149276	2.774	.0058
OTHERSUP	.063861	.030773	.111773	2.075	.0387
(Constant)	1.246048	1.539993		.809	.4190

Mult R=.3822 R.Sq.=.1460 Adj.R.Sq.=.1240 F=6.632 P=.000

Dependent Variable. Incidence of illness in the previous 2 weeks

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.084203	.178722	-.098077	-.471	.6378
AGE	.017102	.019146	.055281	.893	.3723
EDLEVEL	.174115	.117752	.071792	1.479	.1401
SEX	-.266128	.395584	-.033822	-.673	.5016
TOTLEI	.224063	.073756	.149673	3.038	.0026
RANK	.081239	.107190	.039005	.758	.4490
LONGWORK	-.003487	.027638	-.008480	-.126	.8997
DEMANDS	-.023111	.031894	-.128102	-.725	.4692
TENXDEM	.006255	.003180	.595533	1.967	.0500
(Constant)	-.415347	1.978104		-.210	.8338

Mult R=.4868 R.Sq=.2370 Adj.R.Sq=.2173 F=12.045 P=.000

Job Characteristics and Specific Health Symptoms

In the next set of analyses a series of dummy variables were created for each of the health symptoms. Separate multiple regression analyses were conducted for the responses indicating whether officers had suffered specific health complaints in the past year, or in the last two weeks. The job characteristics, and interactions, which were revealed to be significant predictors of the various health symptoms from these analyses, are depicted in Tables 11 and 12. More extensive information concerning these analyses can be examined in Appendix B.

The broad detail of the analyses for those illnesses occurring during the two weeks prior to completing the questionnaire, reveals that job characteristics make significant contributions to a surprising number of the health symptom equations. The majority of the significant effects, however, were apparent in the form of interactions rather than simple main effects. For the most part, the data are reasonably consistent in that higher demands and constraints and fewer supports at work, or at home, were associated with lower levels of health. A simple frequency count of the number of occasions that the job characteristics variables were predictive of health symptoms is, perhaps, one way of assigning importance or degree of influence on general health. This exercise revealed that job demands were the most frequent predictor of health symptoms (n=9), followed by lack of support outside of work (n=7), support at work (n=5) and

finally, non-work supports (n=3). It is apparent, however, that interactions between variables played an important part in predicting health outcomes. On no less than 10 occasions, did the work characteristic variables interact with Tension scores to predict health outcomes. Job demands and support from others outside of work were the two variables that interacted with Tension (Tension x Demands and Tension x Othersup respectively) in 80% of the cases where interactions were present. For the most part, the nature of these interactions was such that high demands and low support, when combined with high tension scores, were associated with ill-health.

The relationship between job characteristics and health symptoms experienced over the previous year showed less of a clear pattern. Perceptions of job demands was the variable most frequently involved in making significant contributions to the regression equations (n=7), with work supports (n=5), the next most common significant predictor (n=5). Work constraints and support outside of work were equally predictive of health symptoms (n=4). Whil most of the significant relationships between job characteristics and health were once more interactive in nature, there was no discernible pattern as there had been for the illnesses occurring during the previous two weeks.

Table 11. Job Characteristics and Illnesses in the Last 2 Weeks

Main Effects	Independent Variable	Dependent Variable	B	T	P
	Worksup	SleepProbs	.0114	2.42	.016
	Worksup	Eye Strain	.0083	2.35	.020
	Demands	Indigestion	.0038	2.11	.036
	Constraints	Chest Pain	.0062	2.28	.024
	Othersup	Arthritis	-.0106	-3.24	.0014
Interaction Effects	Dependent Variable	Independent Variable	B	T	P
	Demands X Othersup	Cold	.0001	2.05	.041
	Tension X Demands	Blood Pressure	.0004	2.49	.013
	Support X Constraints	Hearing Problems	.0011	2.44	.016
	Tension X Othersup	Back Problems	-.0039	-2.80	.005
	Tension X Demands	Back Problems	.0015	2.31	.022
	Tension X Othersup	Heart Problems	.0003	2.36	.019
	Tension X Worksupport	Kidney Problems	-.0003	-2.56	.011
	Tension X Othersup	Kidney Problems	.0003	2.02	.045
	Tension X Demands	Short of Breath	.0006	3.29	.001
	Dem X W/sup X Tension	Short of Breath	-.0001	-2.15	.016
	Tension X Demands	Muscle Aches/Pains	.0022	3.20	.002
	Dem X W/sup X Constr	Loss of Apetite	.0000	2.54	.012
	Demands X Worksup	Dizzy	.0001	2.141	.033

The interactive effect of job characteristics and Tension scores, especially with demands and non-work support, were not apparent for these data. Indeed, on this occasion the job characteristics variables each interacted with Tension scores on only one occasion to predict health symptoms.

The lack of consistency for the data concerning health symptoms over the past year, should, perhaps not be too surprising. For one thing, the data rely on the memories of those reporting their illnesses, and as such, many minor illnesses may have been overlooked. However, there is some consolation in the inconsistency with which health symptoms are predicted by job characteristics in that we can have some confidence in the truthfulness with which the questionnaires were completed. Although no independent check of health status was undertaken, the frequently reported predisposition of those high in negative affect to overreport health symptoms was not evident in any systematic way. The frequent significant interactions of Tension scores with job characteristics can not be attributed to biased responding, since the variance in reporting rates attributable to negative affect, were controlled statistically, by prior entry of Tension scores into the regression analyses. Moreover, there was no consistent relationship between negative affect and health symptoms. Of the two sets of data for health symptoms, only the experience of feeling "rundown" was found to be predicted by Tension scores in the recent (i.e. previous two weeks)and more distant (i.e. one year) time frames.

Table 12. Job Characteristics and Illnesses in the Last Year

Main Effects	Independent Variable	Dependent Variable	B	T	P
	Worksupp	Ulcers	.0062	2.90	.004
	Demands	Eye Strain	.0052	2.16	.032
	Demands	Heart Prob	.0038	2.30	.022
	Demands	Tremor	.0028	2.24	.026
	Othersup	Dizzy	.0127	2.41	.017
Interaction Effects	Dependent Variable	Independent Variable	B	T	P
	Worksup X Othersup	Indigestion	.0005	2.14	.033
	Dem X W/Sup X Constrnt	Stomach Pain	.0004	3.18	.002
	Demands X Constraints	Stomach Pain	-.0001	-2.75	.007
	Tension X Worksup	Chest Pain	.0012	2.25	.025
	Tension X Othersup	Nerves/ Strain	.0005	2.31	.022
	Dem X W/Sup X Constrnt	Liver	.0000	3.75	.000
	Constrnt X Othersup	Liver	-.0003	-3.24	.011
	Tension X Constraint	Rundown	-.0056	-3.56	.001
	Tension X Demands	Rundown	-.000	-2.06	.040
	Demands X Worksup	Rundown	.0006	2.94	.004

Job Characteristics, Health Related Behaviours and Life Style

For days absent from work, the control variables which were found to be influential included Life Events scores and Rank. Those with lower Life Events Scores, and who were of a higher rank, had the fewest days off work. Of the remaining variables, those with least perceived support outside of work, had more days off. When respondents were asked to indicate the extent to which they felt that their organisation was to blame for their absence, only perceived work support made a significant contribution to the regression equation. Those with the lowest perceived support blamed the organisation for most of their days of absence. Summary tables for these analyses can be found below (Table 13).

Of the other health related behaviours (visits to the doctor, number and length of stays in hospital) none of the job characteristics variables had a significant impact on the regression equations, and therefore they will not be discussed in detail. For the interested reader, the results of the statistical analyses for these variables can be found in Appendix B.

The fact that the regression equations for the number of physical health problems revealed that job demand is a strong predictor of the number of reported symptoms, does not necessarily demonstrate a causal relationship between the job and subsequent illness. Intervening variables such as the amount of alcohol and cigarettes consumed, may also have an impact on health.

Table 13. Summary Tables for the Regression Analyses of Health related Behaviours.

Dependent Variable. Number of Days Absent.

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.300329	.244015	.068560	1.231	.2192
AGE	.059628	.106739	.037776	.559	.5768
EDLEVEL	-.607047	.655164	-.049057	-.927	.3548
SEX	-1.473502	2.204820	-.036703	-.668	.5044
TOTLEI	.946764	.411187	.123951	2.303	.0219
RANK	-1.245196	.597456	-.117175	-2.084	.0379
LONGWORK	.105762	.153802	.050404	.688	.4921
DEMANDS	.138047	.051150	.149969	2.699	.0073
(Constant)	3.572590	6.399577		.558	.5770

Mult. R=.2984 R.Sq=.0891 Adj. Rsq.=.0682 F=4.265 P=.000

Dependent Variable. Who is to blame for Days Absent

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.025537	.013108	-.107291	-1.948	.0522
AGE	.008267	.005723	.096395	1.444	.1495
EDLEVEL	-.032067	.035011	-.047694	-.916	.3604
SEX	.115595	.118753	.052992	.973	.3310
TOTLEI	-.018245	.021927	-.043963	-.832	.4059
RANK	.061401	.031652	.106341	1.940	.0532
LONGWORK	-.013567	.008266	-.118999	-1.641	.1017
WORKSUPP	-.030895	.006657	-.251716	-4.641	.0000
(Constant)	2.371062	.320731		7.393	.0000

Mult R=.3690 Adj. R. Sq=.1158 F=6.681 p<.000

Thus, the relationship between the consumption of these drugs and perceptions of job characteristics was analysed next. Table 14 presents a summary of these analyses.

None of the control variables made any contribution to the regression equation for mid-week alcohol consumption and cigarette smoking. The pattern for the weekend drinking was,

however, very different. In this case age, level of education, sex, and scores on the Tension Scale, were all significant predictors. The nature of the relationships indicated that those who were younger, female, and with a higher level of education tended to consume less alcohol.

Perceptions of job demands featured as a main effect for cigarette and week-end alcohol consumption. Those who perceived their jobs as demanding, smoked and drank more during the week-end. A first order interaction between Tension and support outside work (Othersupp), and a second order interaction effect for Demands, Work Supports and Constraints was evident for the amount of alcohol consumed during the week. None of the independent variables was found to predict the frequency with which alcohol was consumed.

The analysis of the second order Demands, Work Supports and Constraints interaction, described above, was undertaken by holding one of the variables constant and reanalysing the data accordingly. This was done by dividing subjects on the basis of a median split of their perceived levels of Work Support. The data for those above and below the median were then analysed separately forcing into the equation the variables that were included in the original regression equation, as described above. Using this procedure, it was found that the Demands and Constraint interaction remained significant for those who perceived themselves as having little support at work. For the high Work Support group no effects of job characteristics either as main or interaction effects were significant.

Table 14. Summary of the Regression Analyses of Alcohol and Cigarette Consumption.

Dependent Variable. Cigarette consumption

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.008138	.039642	.012301	.205	.8375
AGE	-.002346	.017341	-.009840	-.135	.8925
EDLEVEL	-.196027	.106437	-.104886	-1.842	.0665
SEX	.104128	.358193	.017173	.291	.7715
TOTLEI	.115084	.066801	.099757	1.723	.0859
RANK	.002214	.097062	.001379	.023	.9818
LONGWORK	-.002998	.024987	-.009461	-.120	.9046
DEMANDS	.023040	.008310	.165722	2.773	.0059
(Constant)	1.334580	1.039173		1.284	.2000

Mult R.=.2404 Adj. R. Sq.=.0336 F=2.391 p=.016

Dependent Variable. Number of mid-week drinks

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.077383	.039345	.179452	1.967	.0501
AGE	-.013309	.011420	-.085652	-1.165	.2448
EDLEVEL	-.097633	.069925	-.080150	-1.396	.1637
SEX	-.290951	.237059	-.073621	-1.227	.2207
TOTLEI	.031551	.045647	.041962	.691	.4900
RANK	-.081994	.063495	-.078381	-1.291	.1976
LONGWORK	.014548	.016469	.070434	.883	.3777
DSC	1.78138E-05	6.9520E-06	.153788	2.562	.0109
TENXOTH	-.003525	.001377	-.240825	-2.560	.0110
(Constant)	3.379780	.625526		5.403	.0000

Mult.R= .2623 Adj.R.SQ=.0410 F=2.471 p=.010

Table 14 Contd.

Dependent Variable. Number of Alcoholic Drinks at the Week-End

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.029000	.026978	.062836	1.075	.2832
AGE	-.033476	.011801	-.201300	-2.837	.0049
EDLEVEL	-.153441	.072434	-.117695	-2.118	.0349
SEX	-.540104	.243763	-.127692	-2.216	.0274
TOTLEI	.001296	.045461	.001611	.029	.9773
RANK	.027981	.066054	.024992	.424	.6721
LONGWORK	-.007395	.017004	-.033451	-.435	.6639
DEMANDS	.013240	.005655	.136519	2.341	.0198
(Constant)	4.255030	.707214		6.017	.0000

Mult.R=.3122 Adj.R.Sq.=.0745 F=4.238 p<.001

Dependent Variable. Frequency of Drinking During the Week

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.039347	.057397	.038938	.686	.4935
AGE	-.015513	.025727	-.042605	-.603	.5469
EDLEVEL	-.273835	.157455	-.095931	-1.739	.0829
SEX	-.608115	.528559	-.065664	-1.151	.2507
TOTLEI	.074230	.097834	.042129	.759	.4485
RANK	.010727	.142101	.004376	.075	.9399
LONGWORK	.031962	.037014	.066033	.864	.3885
(Constant)	6.172977	1.401717		4.404	.0000

Mult.R.=.1575 Adj.R.Sq=.0048 F=1.239 p=.280

Table 15a. Summary of Regression Analyses of those high in Perceived Work Support

Dependent Variable. Weekly Alcohol Consumption

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.074288	.063762	.157991	1.165	.2460
AGE	-.009711	.016177	-.066179	-.600	.5493
EDLEVEL	-.096054	.104905	-.080618	-.916	.3614
TOTLEI	-.002028	.067751	-.002696	-.030	.9762
SEX	-.332048	.301042	-.101198	-1.103	.2719
RANK	-.053331	.089116	-.055149	-.598	.5505
LONGWORK	.005102	.023834	.025758	.214	.8308
DEMCONS	3.32690E-04	7.4136E-04	.038391	.449	.6543
TENXOTH	-.001952	.002469	-.111153	-.791	.4304
(Constant)	3.188105	.878477		3.629	.0004

Mult.R =.2523 R.Sq.=.0636 Adj.R.Sq.=.0365 F= 2.341 P=.014

Table 15b. Summary of Regression Analyses of those with low levels of perceived support.

Dependent Variable. Weekly Alcohol Consumption

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.073741	.054811	.170607	1.345	.1808
RANK	-.074283	.099826	-.063020	-.744	.4581
SEX	-.182742	.487557	-.031203	-.375	.7084
AGE	-.020129	.018465	-.117291	-1.090	.2776
EDLEVEL	-.182116	.105509	-.143119	-1.726	.0866
TOTLEI	.035669	.066049	.047847	.540	.5901
LONGWORK	.026476	.025230	.119050	1.049	.2959
DEMCONS	8.79713E-04	2.9763E-04	.249554	2.956	.0037
TENXOTH	-.004310	.001830	-.307622	-2.355	.0200
(Constant)	3.168034	1.038293		3.051	.0027

Mult R=.3711 Adj.R.Sq.=.0802 F=2.395 P=.015

Finally, in this section we considered how officers feel that the job affects their family life. The analytical procedure for these data was identical to that described already for all the variables in this section. A summary table of the regression analysis for this variable can be seen below (Table 16). The results revealed a pattern that has become familiar throughout the analyses that have been reported here. Job Demands and lack of support in and out of work contribute directly to family stress. These results suggest a carryover effect from problems at work to the home. It is perhaps not surprising that perceived lack of Work Support is predictive of level of Family Stress. In this instance, however, it is particularly difficult to know the direction of causality; has family life deteriorated because of the problems caused by the officers' jobs and the perceived lack of support, or is the nature of the effect in the reverse direction? In other words, does a poor family life exacerbate the feelings of lack of support? Whatever the nature of this effect, it is interesting to note that job demands has a bigger influence on family stress than either of the support variables. Once more however, this does not reveal anything about the direction of causality but it does indicate that when there are problems at home, or work, then job demands may have added significance for the experience of stress.

Table 16. The effects of Job Characteristics on Family Stress

Dependent Variable. Family Stress

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.493883	.074293	.313936	6.648	.0000
AGE	-.044069	.031541	-.077740	-1.397	.1633
EDLEVEL	.473720	.193706	.106597	2.446	.0150
SEX	-.202313	.654722	-.014032	-.309	.7575
TOTLEI	.129919	.125619	.047361	1.034	.3018
RANK	-.647144	.176628	-.169567	-3.664	.0003
LONGWORK	.036618	.045561	.048593	.804	.4222
DEMANDS	.075524	.017146	.228454	4.405	.0000
OTHERSUP	.121781	.039341	.142906	3.096	.0021
WORKSUPP	.127017	.041889	.156569	3.032	.0026
(Constant)	2.579630	1.951132		1.322	.1871

Mult.R=.6580 R.Sq.=.4329 Adj.Rsq=.4153 F=24.506 P=.000

Work Attitudes

Organizational commitment and job satisfaction were examined using the same methods as those described above. As with previous analyses, several of the control variables were found to make significant contributions to the regression equation. Sex, for example, was found to predict Organizational Commitment scores, a result which confirms previous analyses. For Job Satisfaction, scores on the Tension scale and level of education were negatively related to job satisfaction whereas the relationship was of the reverse form for rank. Those of higher rank were more satisfied.

Support at work was found to be a significant predictor for each work attitude. The nature of these relationships was such that low support had a negative impact on both commitment and satisfaction. The only other apparent main effect was for job demands. Officers who perceived their jobs as demanding were less

satisfied. Two interaction effects were revealed by the analysis of the Organizational Commitment scores. These were: work supports and constraints (SUPCONS) and scores on the Tension scale and support outside work (TENXOTH). Unexpectedly, those who perceived their jobs to be constraining and who had low support outside of work, were the most committed to working for the Department of Corrective Services. Could it be that these officers considered that they had limited options and should stay where they were, despite the constraints of the job. The reverse relationship, in the expected direction, was apparent for the second significant interaction effect; those with high Tension scores and low support outside of work were the least committed to the prisons.

Table 17. Summary Statistics of the Regression Analyses of Work Attitudes

Dependent Variable. Organizational Commitment

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.621652	.647005	.117780	.961	.3373
AGE	-.004253	.109592	-.002236	-.039	.9691
EDLEVEL	.162872	.668072	.010924	.244	.8075
SEX	5.572612	2.265472	.115201	2.460	.0144
TOTLEI	.709296	.424402	.077070	1.671	.0956
RANK	-.049609	.610689	-.003874	-.081	.9353
LONGWORK	.017322	.157732	.006851	.110	.9126
WORKSUPP	-1.480231	.618101	-.543854	-2.395	.0172
SUPCONS	.050952	.018965	.503470	2.687	.0076
TENXWORK	-.120069	.044920	-.600575	-2.673	.0079
(Constant)	61.998285	8.376584		7.401	.0000

Mult R=.6033 Adj. R. Sq.=.3452 F=19.343 P<.001

Dependent Variable. Job Satisfaction

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-1.343978	.290858	-.184446	-4.621	.0000
AGE	.122072	.126029	.046493	.969	.3334
EDLEVEL	-2.513731	.774069	-.122124	-3.247	.0013
SEX	4.481235	2.616154	.067104	1.713	.0876
TOTLEI	.735931	.486122	.057923	1.514	.1310
RANK	1.537615	.705623	.086986	2.179	.0300
LONGWORK	-.083799	.181955	-.024009	-.461	.6454
WORKSUPP	-1.714083	.165950	-.456183	-10.329	.0000
DEMANDS	-.412012	.068450	-.269084	-6.019	.0000
(Constant)	128.822502	7.557539		17.046	.0000

Mult R=.7444 Adj R. Sq=.5424 F=46.824 p<.001

DISCUSSION OF MAJOR FINDINGS.

When the self report data for the present study were collected, the prison officers appear to have been psychologically and physically less healthy than those living in the wider community. The officers reported experiencing higher levels of minor psychological disturbance, as measured by the GHQ, and higher levels of various aspects of anxiety and depression. Such effects were particularly pronounced for male officers who showed themselves to be significantly less healthy than their female colleagues.

Physical ill-health was also more prevalent among the prison officer population. In the two weeks prior to completing the questionnaire, the officers showed a greater incidence of a variety of health symptoms than what would have been expected from a sample taken from the wider community including: sleeplessness, cold and viral infections, ulcer, migraines, chest pains, dizziness, back problems, hearing difficulties and hayfever. Many of these symptoms could be attributed to recent acute exposure to strain inducing situations, thus reflecting poor levels of mental health (e.g. sleeplessness, chest pains, dizziness). Similarly, the elevation of levels of colds and viral infections may be due to immuno-suppressive influence of exposure to stress leaving the officers more prone to infection. Such effects have recently attracted a good deal of attention in the research community (Fletcher, 1991). Indeed, similar results to those reported here have been reported by Karasek (1990) from a

large scale survey of the Swedish working population. To our knowledge, however, this study is one of the first to show a clear increase in physical health symptoms as a result of perceptions of job characteristics for a relatively small and homogenous sample.

It should be remembered that the evidence we have presented is not conclusive with regard to the causal agents or mechanisms involved in establishing the link between job characteristics and health. Situational factors may well have some influence on the data. The present study was, for example, conducted during the spring of 1990 which may account for the elevated levels of hayfever. It may also prove to be the case that the reason officers incur higher levels of colds and flus is that they work in closed and cramped communities. Under such conditions, the probability of contracting a virus may well be extremely high. Indeed, it would be necessary to expose a sample of the general public to the same environmental conditions, and examine the rate of subsequent illnesses, in order to verify that it was the job, and not the exposure risk, which has elevated infection rates. In other words, the job may not be entirely to blame. We shall see later, however, that some strength to the argument that job characteristics influence health outcomes is given when it is shown that officers who perceive their jobs as more stressful suffer relatively more from the health symptoms described above.

Another possible explanation for the elevated incidence of health symptoms, is that officers exhibit a bias towards

over reporting illnesses. Given the level of illness that was reported, it might have been expected that medication use would have similarly been elevated. Against this argument is the observation that, for a large number of the physical health symptoms, prison officers did not differ greatly from incidence rates for the general public. Biased responding is more likely to be consistently high across all symptoms, a pattern which does not characterise the present data set. Nevertheless, these data need to be interpreted cautiously since the figures reported by the Australian Bureau of Statistics are the result of personal interviews, not self report surveys.

In addition to the context independent measures, we also examined the officers attitudes with respect to their work. Thus, levels of job satisfaction and organizational commitment were used as context specific indices directly specifically at the prison officers' jobs. The pattern of results is remarkably consistent with those for the context independent measures. The officers are significantly less satisfied and committed to the Dept. of Corrective Services than the average worker (see Mowday, Porter and Steers 1979 for comparative data). The differences between the sexes was also present for work attitudes with female officers being more satisfied and committed than males.

The differences between the sexes for health and attitudes present a paradox with regard to other aspects of officer behaviour. In particular it is noted that the turnover rate for female officers is significantly higher than that for

males. The wider literature on job satisfaction and organizational commitment attests to the fact that those exhibiting higher levels of these attitudes should be less likely to leave. There are several possible explanations for the effects we have observed. First, female officers may be selected more carefully than males. Although we have no evidence of this it would not be unexpected to find that they are more robust and of stronger mental character than females from the wider community. A second explanation is that the female officers that remain working for the Department of Corrective Services are the ones that want to be there and are easily able to cope with the job of a prison officer. The male officers may remain in the service because they have fewer choices available to them. It is still the case in Australian society, that males are the primary wage earners and bear the majority of the financial responsibilities for maintaining a family. Although officers may be dissatisfied with their jobs, they are secure, and the remuneration package is above that received by the average worker; hence their reluctance to leave. Finally, it is also possible that only females determined to succeed, in what has traditionally been a male dominated working environment, applied for the job.

When the officers were asked about their perceptions of job demands, constraints work and nonwork supports the differences between the sexes emerged once more. Male officers perceived their jobs as being significantly more demanding, constraining and containing less support at work than females. No differences between male and female officers were found for

perceptions of out of work supports. This latter result lends further support to the contention that the responses to the questionnaires were something other than a general bias exhibited by a minority of malcontents. Instead, this pattern of results indicates a further reason as to why differences in health between male and female officers is apparent in the present study. A possible explanation which suggests itself is that male and female officers do, or are required to, undertake different duties. If so, then the difference apparently has a positive effect on female health. It is necessary to be cautious, however, when making such an interpretation of the data. Firstly, the suggestions we have made with regard to the differences between males and females are not based on data, merely speculation that can only be verified with additional research. Second, it should not be assumed that the suggestions are independent of each other. It is possible, for example, that better selection procedures for females lead to officers who perceive their jobs as less demanding. As a consequence, they may be less likely to suffer the strain experienced by workers who do not have the skills to cope adequately with a difficult job. At the same time as having more of the relevant skills for the job, they may also be more robust. At this point, however, the argument as to why they appear to be more suited to prison officer work becomes circular and without additional research this issue cannot be resolved.

The analysis of differences in officer perceptions across prisons, revealed that those in the medium security prisons,

perceived themselves to have lower constraints and more support at work than either of the maximum and minimum security establishments. It is surprising that there are no significant differences between the minimum and maximum security prisons with regard to job demands and constraints. These results, therefore, do not support the perceptions that officers had of their jobs three years earlier when another survey was conducted (see Dunne and Morrison, 1991). In trying to understand why the data of the present survey do not replicate those reported previously, only two plausible reasons emerged. In the present study, it appears that the amount of variation in the dependent variables has increased over that reported previously. In addition, for both the present and previous studies, negative affect was found to interact with various job components to predict well being. Thus, those high in negative affect react to increases in aspects of job design such as job demands, in a way that is exaggerated when they are compared to those low in negative affect. In the present study, the officers are less healthy than the results revealed by the study of Dunne and Morrison (1991). The effect of a general increase in levels of job stressors would, therefore, be exaggerated for those high in negative affect. The consequence of such an effect in the present study, is that the within institution variability may have increased disproportionately to the between institution variability. Under those circumstances the particular statistical procedures, that have been applied to the data in the present study, would be unlikely to detect smaller

differences between prisons, even if they are consistent. Unfortunately, it has not been possible to conduct a true longitudinal analysis of the data across studies. When the questionnaires were distributed to officers for the current survey, the codes that would have allowed us to identify those that participated previously, were systematically removed. This occurred despite assurances from the Prison Officer Union and ourselves that no access to names would be possible from our data.

The only differences between prisons for the dependent variables, were level of job satisfaction and the incidence of some of the health symptoms (e.g. colds/flus and high blood pressure). Satisfaction was lowest in the maximum security prisons when compared to the other prisons, with the officers working in the medium security prisons being most satisfied. This effect was, however, largely due to the difference between the maximum and medium security prison. Officers working in the prisons with medium levels of security were the most satisfied of all.

The differences in work attitude across prisons was also reflected in a number of physical health problems. Curiously, officers working in environments where the prisoners were regarded as posing a minimum security risk, reported the most health symptoms. Those in the medium security institutions suffered fewer colds/flu (closely followed by those in the maximum security prisons), and those in the minimum security prisons suffering the most illnesses of this type. The same pattern was also evident for the incidence of high blood

pressure. The broad pattern of the results is in agreement those reported by Dunne and Morrison (1991), the difference being that in the previous study, those in minimum security prisons were "better off". In the present study, it was officers working in the medium security prisons who appeared to be healthier.

Part of the difference between studies may be due to changes in management practices. However, too much emphasis should not be put on this point since it was not something that we deliberately investigated. Although the hypothesis is plausible and testable, it should be pointed out that there are alternative explanations which may be equally worthy of investigation. For example, the minimum security prisons are predominantly located in the country areas. Hence, location is a variable which confounds an interpretation of the data in terms of prison type alone. The downturn in the rural economy of Australia may have triggered a deterioration in health that is not unique to the officer population living in those areas.

The discussion so far, has been concentrated at a reasonably superficial level. The use of perceptions of job characteristics, uncorrected for extraneous influences (e.g., age, rank and life events) on the various dependent variables, provides a rather coarse grained analysis of the data. More fine grained analyses, using hierarchical regression techniques, were undertaken in which the influence of control variables was partitioned out prior to assessing the influence of job characteristics on strain outcomes. These analyses were not only concerned with the main effects but, in addition,

examined the influence on well being of interactions between job components and negative affect.

The results showed that job characteristics exert a significant influence on well being, even after the influence of demographic and other control variables have been taken into account. Thus, in a very general sense, the data support previous research (e.g., Karasek and Theorell, 1990; Billings and Moos, 1982, Morrison et al 1992) indicating that job components have a significant effect on mental and physical well being.

The mental health measures, work and non-work supports, seemed to exert powerful main effects. Lack of support was associated with higher levels of anxiety, depression and minor psychological disturbance (high GHQ scores). For physical health on the other hand, job demands and non-work supports were the major influences. In each case, their influence was especially evident when the influence of negative affect was jointly considered.

In a previous study of prison officers, we (Morrison et al. 1992) reported that the best predictor of mental health and work attitudes was the interaction of negative affect and job demands. On this occasion, such an effect was mostly evident for the measures of physical health, although, of the mental health variables, levels of Boredom/Withdrawal were also predicted by this interaction term. Thus, the results from the earlier study have only been partially replicated. There may be several reasons for the inconsistencies between the two surveys. As already briefly discussed, one of these is

that the nature and level of the stressors that officers are experiencing has changed. An earlier study of Morrison et al. (1987) revealed that officers scored worse than the general population on only the boredom/withdrawal scale, whereas in the present study there was a general elevation of strain levels across the majority of the mental health indices. Thus, the job factors affecting health (positively or negatively) when one is already exhibiting high levels of strain, may be different from those that are influential under less strained circumstances.

While no single measure of job components was a consistent predictor of the range of dependent variables, the nature of the observed effects can be thought of as lending weak support to the general notion that demands and supports (work and non-work) have significant effects on well-being. Only one three factor interaction effect between the job components variables, demands, work support and constraint, proved to be a significant predictor of any of the dependent variables. In this case the result was for the amount of alcohol officers consumed by officers at the weekend. Although this result is in line with what would be predicted by Karasek's model (Karasek and Theorell, 1990), the evidence from the present study is that job demands and social supports, and their interaction with negative affect, are the major influences on well being. Thus it may be concluded that the evidence for a buffering effect of low constraints, when demands are perceived to be high, is weak, at least for prison officers. That this is so, requires some explanation since

work constraints (or rather autonomy) has played such a central part in the work of Karasek (1990, Karasek and Theorell, 1991) and other theories of job design (e.g. Hackman and Oldham, 1976). One explanation in that job constraints are uniformly high for all officers, and necessarily so, when the nature of their "business" is considered. If this is true, then it is unsurprising that a constraints measure fails to capture any of the variance in the dependent variables. It is under such circumstances that the bluntness of a general instrument such as that employed in this study is revealed. Future work could explore the different facets of constraint as identified in the work of Breaugh (1985, 1989) in an attempt to generate a more refined distillations of the concept.

The current study suggests some potentially useful avenues for further research. Additional effort is needed to examine what it is that is meant by the generic terms work demands and supports. As with the constraints measure, the present study has taken a fairly crude estimate of the perceptions of these particular job characteristics. For the job demands measure, no account was taken of whether officers welcomed or rejected the particular demands to which they were subjected. Similarly the concepts of work and non-work support require additional exploration. The data from this study revealed that the source of social support is important but we know of no work that has considered whether the influence is preventive or whether it facilitates recuperation after exposure to adverse conditions. Morrison et al. (1992)

suggested that the benefits of social supports in particular, may be in part a function of when they were made available and who were the providers. It has already been shown here that the source of support has a bearing on different outcomes, thus timing may also prove to be vital. One explanation for this effect, albeit post hoc, is that officers don't get support until they are "feeling the strain". The social supports scale did not address this possibility directly but this explanation was offered to us during a feedback session with the officers. The fact that the working environment offers the opportunity for support does not mean that it is accepted immediately. Part of this may be due to the "...macho working personality that the job requires of them" (Cheek and Miller, 1983). Support may only be accepted once the effects of exposure to stress cannot be controlled.

To our knowledge, only Parkes (1990) has reported that negative affect may act as a moderator, rather than as a main effect, in the job design-strain relationship. The present study supports her work in that she too reported that job demands and negative affectivity combine to influence mental health. The results of Parkes (1990) and those of the present study would seem to support an argument for the use of individual characteristics, such as negative affectivity, for selection purposes. It may be possible to select out those who are more likely to suffer ill-health as a function of exposure to particular work stressors. For work environments (e.g. prisons) in which it is difficult to manipulate job characteristics such a finding may prove to have great

utility.

Despite the optimism conveyed by the above, the inconsistent ways in which some of the interactions of the job characteristics variables predicted the dependent variables has yet to be addressed. A more fine grained analysis of the measuring instruments, as suggested above, might also be beneficial in unravelling some of these. It is difficult to explain, for example, how it is that high levels of support and low constraint can have a negative impact on health when the majority of the other results were in the opposite direction. The statistical nature of our work may be the root cause of this spurious result, and it should perhaps be ignored since the general pattern of the results tells a reasonably consitent story.

At least two assumptions have pervaded the data analyses that have beem reported here. First, as is often the case with survey research, it has been assumed that the effect of the independent variables will be reflected in changes to the dependent variables at roughly the same point in time. Such an assumption may not be warranted in all cases since it is not unknown for temporal lags, between cause and effect, to be noted in the literature (e.g., Wall and Clegg, 1981).

Second it has been implicitly assumed that there exists a linear relationship between job stressors and resultant strain. Various alternative functional relationships between the dependent and independent variables were not examined, although consderable benefit may be accrued from doing so. The vitamin model of job design and stress offered by Warr (1987)

provides a useful framework to guide future work on this topic.

SUMMARY AND CONCLUSIONS.

There are several conclusions that can be drawn from the present study. Negative affectivity appears to have a truly interactive effect with job components. Those high on this dimension suffer elevated levels of job related strain when exposed to adverse occupational conditions. In the present study, such conditions prevailed when job demands were high and levels of support were perceived to be low. The impact of high demands and low supports was evident across a range of variables relating to both physical and mental health as well as job related attitudes.

From a practical viewpoint the implications of the results from this study seem clear. In order to control ill health, careful attention may need to be given to the selection of officers, since those high in negative affect generally showed the lowest levels of well-being. Thus, effective organizational stress management may be undertaken by adopting selection strategies which take into consideration individual characteristics. In view of the fact that individual stress management programs are of unproven benefit (Murphy, 1986; 1988) such an approach is recommended especially for those organizations, such as prisons, which are highly constrained in the services that must be performed.

In addition, it seems that close attention should also be given to the intra and extra organizational support structures. Indeed if these can be significantly modified, then the selection criteria suggested previously may not necessarily apply. Changes to work and non-work support for prison officers may well be achievable without compromising the way that prisoners are managed. If the sole predictors of well being and attitude had been job demands and constraints, there may have been little that could be done. Changes to selection methods would undoubtedly help future employees but do little for those currently working in the prisons.

From a research perspective there are a number of unresolved issues which require further attention. First it seems clear that longitudinal studies are required in order that we can be more certain about the causal impact of job characteristics on health. Second, it seems that with homogenous populations of workers more refined measurement instruments are desirable. These will allow researchers to be more precise in their findings and administrators to be more specific about the desired effects of changes in policy. Finally, in addition to the need for more longitudinal studies, it is also important that standardised measures of job components are developed so that levels of stress exposure can be equated and their impact assessed across organizational settings. If this were achievable, then it might help organizations and policy makers to predict and explain changes in attitude and well-being among current employees. With this knowledge, effective management programmes can be developed

and monitored.

ACKNOWLEDGMENTS

We would like to acknowledge the financial assistance given to this project by the Criminology Research Council of Australia. Thanks also go to the Prison Officers' Union, The Dept. of Corrective Services and all of the prison officers who took the time to complete the questionnaire.

REFERENCES.

Australian Bureau of Statistics, (1983), **Australian Health Survey 1983**. Catalogue No. 4311.0. Canberra: ABS.

Banks, M.H., Clegg, C.W., Jackson, P.R., Kemp, N.J., Stafford, E.M., and Wall, T.D., (1980), The use of the General Health Questionnaire as an indicator of mental health in occupational studies. **Journal of Occupational Psychology**, **53**, 187-194.

Berger-Gross, V. and Kraut, A.I., (1984), Great expectations: A no-conflict explanation of role conflict. **Journal of Applied Psychology**, **69**, 261-271.

Billings, A.G. and Moos, R.H., (1982), Work stress and the stress-buffering roles of work and family resources. **Journal of Occupational Behaviour**, **3**, 215-232.

Breaugh, J.A., (1985), The measurement of work autonomy. **Human Relations**, **38**, 551-570.

Breaugh, J.A., (1989), The Work Autonomy Scales: additional validity evidence. **Human Relations**, **42**, 1033-1056.

Brief, A.P., Burke, M.J., George, J.M., Robinson, B.S., and Webster, J., (1988), Should negative affectivity remain an unmeasured variable in the study of job stress? **Journal of Applied Psychology**, 73, 207-214.

Broadbent, D.E. (1985) The Clinical Implications of Job Design, **British Journal of Clinical Psychology**, 24, 33-34.

Buck, V.E., (1972), **Working under Pressure**. London: Staples Press.

Burke, R.J., Weir, T. and DuWors, R.E., (1980), Work demands on administrators and spouse well-being. **Human Relations**, 33, 253-278.

Cattell, R.B., (1973), A check on the 28 factor Clinical Analysis Questionnaire structure on normal and pathological subjects. **Journal of Multivariate Experimental Personality and Clinical Psychology**, 1(1), 3-12.

Cattell, R.B., Eber, H.W. and Tatsouka, M.M., (1970), **Handbook for The Sixteen Personality Factor Questionnaire (16PF)**. Champaign, Illinois: IPAT.

Cheek, F.E. and Miller, M, (1983), The experience of stress for correction officers: A double bind theory of correctional stress. **Journal of Criminal Justice**, **11**, 105-120.

Costa, P.T., and McCrae, R.R., (1987), Neuroticism, somatic complaints, and disease, **Journal of Personality**, **55**, 299-316.

Costa, P.T. and McCrae, R.R., (1985), Hypochondriasis, neuroticism, and aging. **American Psychologist**, **40**, 19-28.

Dunne, M. and Morrison, D.L., (1991), Health, stress and job satisfaction in prison officers. **Journal of Occupational Health and Safety-Aust. NZ**, **7**, 49-58.

Eysenck, H.J., and Eysenck, S.B.G., (1964), **The manual of the Eysenck Personality Inventory**. London: University of London Press.

Fletcher, B.C., (1988), The epidemiology of occupational stress. In C.L. Cooper and R.L. Payne (eds.), **Causes, Coping and Consequences of Stress at Work.** Chichester: John Wiley and Sons.

Fletcher, B.C. and Payne, R.L., (1980a), Stress and Work: A review and theoretical framework (I). **Personnel Review**, **9**(1), 19-29.

Fletcher, B.C. and Payne, R.L., (1980b), Stress and Work: A review and theoretical framework (II). **Personnel Review**, **9**(1), 19-29.

Fletcher, (B), C., and Payne, R.L., (1982), Levels of reported stressors and strains amongst schoolteachers: some U.K. data, **Educational Review**, **34**, 267-278.

Fried, Y, and Ferris, G.R., (1987), The validity of The Job Characteristics Model: A review and meta-analysis. **Personnel Psychology**, **40**, 287-322.

Glick, W.H., Jenkins, G.D., and Gupta, N., (1986), Method versus substance: How strong are underlying relationships between job characteristics and attitudinal outcomes? **Academy of Management Journal**, **29**, 441-464.

Griffin, R.W., and Bateman, T.S, (1986), Job Satisfaction and Organizational Commitment. In C.L. Cooper, and I.T. Robertson, **International Review of Industrial and Organizational Psychology**, Chichester: John Wiley and Sons.

Goldberg, D., (1972), **The detection of psychiatric illness by questionnaire**. London: Oxford University Press.

Griffin, R.W., (1983), Objective and social sources of information in task redesign: A field experiment. **Administrative Science Quarterly**, **28**, 184-200.

Griffith, J., (1985), Social support providers: Who are they? Where are they met? And the relationship of network characteristics to psychological distress. **Basic and Applied Social Psychology**, **6**(1), 41-60.

Hackman, J.R. and Oldham, G.R., (1975), Development of the Job Diagnostic Survey. **Journal of Applied Psychology**, **60**, 159-170.

Harenstam, A., Palm, V.B., and Theorell, T.P.G., (1988), Stress, health and the working environment of Swedish Prison Officers. **Work and Stress**, **2**, 281-290.

Harenstam, A. and Theorell, T.P.G., (1988), Work conditions and urinary excretion of catecholamines: a study of prison staff in Sweden. **Scandinavian Journal of Work Environment and Health**, **14**, 257-264.

Hinkle, L.E. Jr., Whitney, L.H., Lehman, E.W., Dunn, J., Benjamin, B., King, R., Plakun, A., and Fehinger, B., (1968), Occupation, Education and coronary heart disease, **Science**, **161**, 238-246.

Holmes, T.H. and Rahe, R.H., (1967), The social readjustment rating scale. **Journal of Psychosomatic Research**, **11**, 213-218.

Jackson, S., (1983), Participation in decision making as a strategy for reducing job related strain. **Journal of Applied Psychology**, **68**, 3-19.

James, L.R., and Tetrick, L.E., (1986), Confirmatory analytic tests of three causal models relating job perceptions to job satisfaction. **Journal of Applied Psychology**, **71**, 77-82.

Johnson, J.V., Hall, E.M., and Theorell, T., (1990), The combined effects of work strain and social isolation on prevalence and mortality in cardiovascular disease. **Scandinavian Journal of Work Environment and Health**. In Press.

Kaplan, H.B., Robbins, C. and Martin, S.S., (1983), Antecedents of psychological distress in young adults:Self rejection, deprivation of social support and life events. **Journal of Health and Social Behaviour**, **24**, 230-244.

Karasek, R.A., (1979) Job Demands, Job Decisions, Latitude and Mental Strain: Implications for Job Redesign. **Administrative Science Quarterly**, **24**, 285-308.

Karasek, R.A., (1989), Control in the workplace and its health related impacts. In S.L. Sauter, J.J., Hurrel, and C.L. Cooper (eds.), **Job control and worker health**. New York: Wiley.

Karasek, R., (1990), Lower health risk with increased job control among white collar workers. **Journal of Organizational Behaviour**, **11**, 171-185.

Karasek, R.A., Baker, D., Marxer, F., Ahlbom, A., and Theorell, T., (1981), Job decision latitude, job demands and cardio-vascular disease: A prospective study of Swedish men. **American Journal of Public Health**, **71**, 694-705.

Karasek R.A. and Theorell, T., (1990), **Healthy Work: Stress, productivity, and the reconstruction of working life**. New York: Basic Books.

Karasek, R.A., Theorell, T., Schwartz, J.E., Schnall, P.L., Pieper, C.F., Michela, J.L., (1988), Job characteristics in relation to prevalence of myocardial infarction in the U.S. Health Examination Survey (HES) and the Health Nutrition Examination Survey (HANES). **American Journal of Public Health**, **78**(8), 910-918.

Kessler, R.C., Price, R.H., and Wortman, C.B., (1985). Social factors in psychopathology: Stress social support and coping processes. **Annual Review of Psychology**, **36**, 532-572.

Krug, S.E., Cattell, R.B and Associates, 1980, **Clinical Analysis Questionnaire Manual**. Champaign, Illinois: IPAT.

Krug, S.E. and Laughlin, J.E., (1977), Second order factors among normal and pathological primary personality traits. **Journal of Consulting Psychology**, **45**(4), 575-582.

Krug, S.E. and Laughlin, J.E, (1976), **Handbook for the IPAT Depression Scale**. Champaign, Illinois: IPAT.

Lasky, G.L., Gordon, B.C., and Srebalus, D.J., (1986), Occupational stressors among federal correctional officers working in different security levels, **Criminal Justice and Behaviour**, **13**, 317-327.

Launay, G. and Fielding, P.J., (1989), Stress among prison officers: Some empirical evidence based on self report. **The Harvard Journal**, **28**(2), 138-148.

Long, N., Shouksmith, G., Voges, K. and Shannon, R., (1986), Stress in prison staff. **Criminology**, **24**, 331-345.

MacLeod, C., and Mathews, A., (1991, Biased cognitive operations in anxiety: accessibility of information or assignment of processing priorities. In press, **Behaviour Research and Therapy**.

Morrison, D.L., Dunne, M.P., Fitzgerald, R., and Cloghan, D., (1992), Job design and Stress in prison officers. In press, **Work and Stress**.

Morrison, D.L., Ou, D. and Roberts, D, (1987), Job design and levels of physical and mental strain among prison officers. **Proceedings of the Human Factors Society: 31st Annual Meeting**, 340-344. Santa Monica: Human Factors Society.

Murphy, L.R., (1988), Workplace interventions for stress reduction and prevention. In C.L. Cooper and R. Payne (eds.), **Causes, coping and consequences of stress at work**. Chichester: John Wiley and Sons Ltd..

Murphy, L.R., (1984), Occupational stress management, **Journal of Occupational Psychology**, **57**, 1-15.

Mowday, R.T., Steers, R.M., and Lyman, W.P., (1979), The measurement of Organizational Commitment. **Journal of Vocational Behavour**, **14**, 224-247.

National Heart Foundation, (1983), **Risk Factor Prevalence Study**, No. 2, 1983. Brisbane: National Heart Foundation.

O'Brien, G.E., and Dowling, P., (1980), The effects of congruency and desired job attributes upon job satisfaction. **Journal of Occupational Psychology**, **53**, 121-130.

O'Reilly, C.A., and Caldwell, D.F., (1979), Informational influence as a determinant of perceived task characteristics and job satisfaction. **Journal of Applied Psychology**, **64**, 157-165.

Parkes, K.R., (1990), Coping, negative affectivity, and the work environment: Additive and interactive predictors of mental health. **Journal of Applied Psychology**, **75**, 399-409.

Payne, R.L., (1988), A longitudinal study of the psychological well-being of unemployed men and the mediating effect of neuroticism. **Human Relations**, **41**, 119-138.

Payne, R.L., (1979), Demands, supports and constraints. In C.J. MacKay and T. Cox (eds.), **Response to Stress: Occupational Aspects**. London: International Publishing Corporation.

Payne, R., & Fletcher, B, C. (1983). Job Demands and constraints as predictors of psychological strain among school teachers. **Journal of Vocational Behaviour**, 22, 136-147.

Payne, R.L. and Hartley, J., (1987), A test of a model for explaining the affective experience of unemployed men. **Journal of Occupational Psychology**, **60**, 31-47.

Spielberger, C.D., Gorsuch, R.L., and Lushene, R.E., (1970). **Manual for the State-Trait Anxiety Inventory**. Palo Alto, CA: Consulting Psychologists Press.

Sutton, R.I., (1981), Job stress among primary and secondary school teachers, **Work and Occupations**, **11**, 7-28.

Taber, T.D., Beehr, T.A., and Walsh, J.T., (1985), Relationship between job evaluation ratings and self-ratings of job characteristics. **Organizational Behaviour and Human Decision Processes**, **35**, 27-45.

Taylor, J.A., A personality scale of manifest anxiety. **Journal of Abnormal and Social Psychology**, **48**, 285-290.

Thoits, P.A., (1982), Conceptual, methodological and theoretical problems in studying social support as a buffer against life stress. **Journal of Health and Social Behaviour**, **23**, 145-159.

Ullah. P., Banks, M.H. and Warr, P.B., (1985), Social Support, social pressures and psychological distress during unemployment. **Psychological Medicine**, **15**, 283-295.

Wall, T.D. and Clegg, C.W., (1981), A longitudinal field study of group work redesign. **Journal of Occupational Behaviour**, **2**, 31-49.

Warr, P.B., (1987), **Work, Unemployment and Mental Health**. Oxford: Oxford University Press.

Watson, D., and Clark, L.A., (1984), Negative affectivity: The disposition to experience aversive emotional states. **Psychological Bulletin**, **96**, 465-490.

Watson, D., and Pennebaker, J.W., (1989), Health complaints, stress, and distress: Exploring the central role of negative affectivity, **Psychological Review**, **96**, 234-254.

Webster, I.W., Porritt, D.W. and Brennan, P.J., (1983), Reported health, life-style and occupational stress in prison officers. **Community Health Studies**, 7(3), 266-277.

Williams, T.A., and Soutar, G.N., Level of custody and attitude among prison officers: A comparative study. **Australian and New Zealand Journal of Criminology**, **17**, 87-94.

APPENDIX A

JOB DESIGN AND OCCUPATIONAL HEALTH

A research project conducted by Dr David Morrison and Mr Michael Dunne from Murdoch University, with the support of the W.A. Prison Officers' Union.

CODE NUMBER _____

SECTION 1: GENERAL INFORMATION
PLEASE ANSWER ALL QUESTIONS

1. What is your age (in years)? _____

2. Please circle your gender..... Male 1
Female 2

3. Please circle your marital status..... Single 1
Married 2
DeFacto 3
Divorced 4
Separated 5
Widowed 6

4. Please circle your highest level of education

Primary School	1	Business College	5
Completed 3 years High School	2	Technical College	6
Completed 4 years High School	3	Trade Qualifications	7
Completed 5 years High School	4	Tertiary Qualifications	8

5. How long have you worked as a Prison Officer?
(If less than one year, please answer as 1)

_____ year(s)

6. What job/rank do you currently have in the prison?

Probationary Officer 1
Prison Officer 2
First Class Prison Officer 3
Senior Officer 4
Nursing Officer 5
Industrial Officer 6
Instructor 7
Chief Officer 8
Other 9
-> (Specify_____)

7. On what basis are you currently employed?
full time 1
part time 2
casual 3

8. How many hours do you work during the average week?

_____

9. When you could not attend work during the past year, how many days were due to:

a. everyday illnesses (colds etc) _____
b. serious illness _____
c. family member illness or injury _____
d. work induced injury _____
e. injuries sustained out of work _____
f. stress at work and the feeling of not being able to face another day _____
g. other (specify _____) _____

h. TOTAL NUMBER OF DAYS ABSENT (if 0 indicate in space) _____

10. When you have been off work through illness or injury to what extent do you feel that work at the prison has been to blame?

completely at fault 1
partially at fault 2
not at fault at all 3

SECTION 2: HEALTH AND FITNESS

PLEASE ANSWER ALL QUESTIONS

1. Please circle how you would describe your present state of health

Excellent	1	Fair	4
Very good	2	Poor	5
Average	3		

2a. What is your approximate body weight (in kilos or lbs) _____

2b. What is your height (in cms or feet and inches) _____

3. Please circle how you would describe your level of fitness

I consider myself to be very fit for my age 1
I consider myself to be moderately fit for my age 2
I consider myself to be moderately unfit for my age 3
I consider myself to be very unfit for my age 4

4. If you smoke please circle how many cigarettes or equivalent you smoke daily

Over 40	1	5-10	5
30-40	2	0-5	6
20-30	3	None	7
10-20	4		

5. If you drink alcohol please circle how often you do so

Every day	1	2 days a week	6
6 days a week	2	1 day a week	7
5 days a week	3	Once a fortnight	8
4 days a week	4	Less often	9
3 days a week	5	Never	10

6. If you normally drink during the week please show the number of drinks (middies, stubbies, glasses of wine) you have in a single sitting (DOUBLE the number if you drink schooners/pints or double shots of spirits):

more than 20	1	15-20	2
10-15	3	5-10	4
3-5	5	1-2	6
dont drink	7		

7. If you drink on the weekend please show the number you have on average in a single sitting (DOUBLE the number if you drink schooners/pints or double shots of spirits)

more than 20	1	15-20	2
10-15	3	5-10	4
3-5	5	1-2	6
dont drink	7		

8. Please circle how often you exercise for 30 mins or more

Every day	1	Once a fortnight	5
5-6 days a week	2	Less than once a month	6
3-4 days a week	3	Less than once a year	7
1-2 days per week	4		

9. The following questions are about your general physical health. Please indicate when you have suffered from the following problems by circling the number in the appropriate column.

		In the last 2 weeks	In the last year	Not in the last year
a.	Colds/influenza	1	2	3
b.	High blood pressure	1	2	3
c.	Hay fever	1	2	3
d.	Sleeping problems	1	2	3
e.	Migraine/ severe headache	1	2	3
f.	Eye strain	1	2	3
g.	Ulcers	1	2	3
h.	Indigestion	1	2	3
i.	Stomach pains	1	2	3
j.	Hearing problems	1	2	3
k.	Back problems	1	2	3
l.	Chest pains	1	2	3
m.	Heart disease/trouble	1	2	3
n.	Paralysis, tremor or shaking	1	2	3
o.	Asthma	1	2	3
p.	Kidney trouble	1	2	3
q.	Nervous breakdown	1	2	3
r.	Liver trouble	1	2	3
s.	Repeated skin trouble	1	2	3
t.	Feeling run down	1	2	3
u.	Shortness of breath	1	2	3
v.	Arthritis	1	2	3
w.	Muscular aches/ pains	1	2	3
x.	Loss of appetite	1	2	3
y.	Dizziness	1	2	3

9. The following questions are about your general physical health. Please indicate when you have suffered from the following problems by circling the number in the appropriate column.

		In the last 2 weeks	In the last year	Not in the last year
a.	Colds/influenza	1	2	3
b.	High blood pressure	1	2	3
c.	Hay fever	1	2	3
d.	Sleeping problems	1	2	3
e.	Migraine/ severe headache	1	2	3
f.	Eye strain	1	2	3
g.	Ulcers	1	2	3
h.	Indigestion	1	2	3
i.	Stomach pains	1	2	3
j.	Hearing problems	1	2	3
k.	Back problems	1	2	3
l.	Chest pains	1	2	3
m.	Heart disease/trouble	1	2	3
n.	Paralysis, tremor or shaking	1	2	3
o.	Asthma	1	2	3
p.	Kidney trouble	1	2	3
q.	Nervous breakdown	1	2	3
r.	Liver trouble	1	2	3
s.	Repeated skin trouble	1	2	3
t.	Feeling run down	1	2	3
u.	Shortness of breath	1	2	3
v.	Arthritis	1	2	3
w.	Muscular aches/ pains	1	2	3
x.	Loss of appetite	1	2	3
y.	Dizziness	1	2	3

10. How many times over the past year did you visit your doctor for medical treatment?

None	1
One, two or three	2
More than three	3

11. Were your visits to the doctor for treatment for:

A number of minor disorders?	1
One persistent minor disorder?	2
One or more major illnesses?	3

12. In the past 12 months how many times have you been admitted to hospital or attended outpatients?

1 visit	1	4 visits	4
2 visits	2	5 or more visits	5
3 visits	3	Never	6

13. If you have spent some time in hospital in the last 12 months please circle for how long

1 week or less	1	More than 2 weeks	3
1-2 weeks	2	Never	4

14. If you have been taking medication in the last TWO WEEKS please circle the reason(s): (you may choose more than one answer)

Common pain relief	1
Cough/cold medication	2
Allergy medication	3
Skin ointments	4
Laxatives or stomach medicines	5
Tranquillizers/sedatives or nervous medicines	6
Sleeping pills or medicines	7
Vitamins or mineral supplements	8
Heart, blood pressure or fluid medicines	9
Other medicines	10
No medicines	11

15. If you have been taking medication in the last TWELVE MONTHS please circle the reason(s): (you may choose more than one answer)

Common pain relief	1
Cough/cold medication	2
Allergy medication	3
Skin ointments	4
Laxatives or stomach medicines	5
Tranquillizers/sedatives or nervous medicines	6
Sleeping pills or medicines	7
Vitamins or mineral supplements	8
Heart, blood pressure or fluid medicines	9
Other medicines	10
No medicines	11

IN THIS SECTION WE ARE INTERESTED IN HOW YOU HAVE FELT OVER THE PAST FEW WEEKS. PLEASE CIRCLE A NUMBER FOR EACH QUESTION

1. Have you recently been able to concentrate on what you were doing

better than usual	1
same as usual	2
less than usual	3
much less than usual	4

2. Have you recently lost much sleep over worry

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

3. Have you recently felt you are playing a useful part in things

more than usual	1
same as usual	2
less so than usual	3
much less than usual	4

4. Have you recently felt capable of making decisions about things

more so than usual	1
same as usual	2
less so than usual	3
much less capable	4

5. Have you felt constantly under strain

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

6. Have you recently felt that you can't overcome your difficulties

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

7. Have you been able to enjoy your day to day activities

more so than usual	1
same as usual	2
less so than usual	3
much less than usual	4

8. Have you been able to face up to your problems

more so than usual	1
same as usual	2
less able than usual	3
much less able	4

9. Have you been feeling unhappy or depressed

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

10. Have you been losing confidence in yourself

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

11. Have you thought of yourself as a worthless person

not at all	1
no more than usual	2
rather more than usual	3
much more than usual	4

12. Have you been feeling reasonably happy all things considered

more so than usual	1
about the same as usual	2
less so than usual	3
much less than usual	4

In the following section you will find a series of questions relating to how you feel in general. Please read them carefully and answer all questions. There are no right or wrong answers. There are three alternatives for each question. Please indicate the answer you consider to be the most appropriate by circling the number to the right of the statement you most agree with.

13. I seem to get irritated over quite small setbacks more often than I should.

yes, often	1
perhaps, sometimes	2
no, almost never	3

14. When people talk nonsense, I feel I have to put them straight.

generally	1
occasionally	2
never	3

15. I hardly ever get impatient and angry with people.

true, I almost never do	1
somewhere in between	2
false, I get angry quickly	3

16. If people shout suggestions when I'm playing a game it doesn't annoy me.

True	1
in between	2
false it does annoy me	3

17. People seem to get in my way and frustrate me a lot.

true	1
uncertain	2
false	3

18. The noise of a nail on glass, and other screechy sounds, sets my nerves on edge.

unbearably	1
somewhat	2
hardly at all	3

19. I can put worries and responsibilities out of my mind whenever I want to.

yes	1
uncertain	2
no	3

20. When something really makes me furious, I find I calm down again quite quickly.

yes	1
sometimes	2
no	3

21. I get restless and depressed if I don't get some excitement.

often	1
sometimes	2
never	3

22. Noise wakens me from deep sleep.

Yes, often	1
Sometimes	2
No, hardly ever	3

23. I get no thrill in seeing a daring person take risks that people say are foolish, and yet get away with them.

true, I get no thrill	1
occasionally	2
false, I like it	3

24. I would like a more adventurous job.

yes, very much	1
not much	2
no, not at all	3

25. I'm more likely to complain about how unfair things are than to think "well, that's the way it goes" or "that's life".

yes, things are unfair	1
uncertain	2
no	3

26. I avoid jobs where I have to speak up or take charge.

yes, generally	1
somewhat	2
no, not at all	3

27. I worry and think a lot about things that may go wrong.

often	1
sometimes	2
never	3

28. I feel discontented unless I can find some daring thing to do.

yes	1
uncertain	2
no	3

29. I prefer to be with a lively group.

yes, certainly	1
sometimes	2
no	3

30. Everyday life doesn't give me much chance to express myself, and I need something exciting.

true, I feel frustrated	1
uncertain	2
false, I have plenty of expression	3

31. Other people seem to get less upset by dangers and troubles than I do.

true, others get less upset	1
uncertain	2
false, others get more upset	3

32. I often feel bored.

yes	1
sometimes	2
rarely	3

33. I seem to be clumsy and shaky in handling things.

always	1
sometimes	2
rarely	3

34. I hate the thought of having to go to hospital if I got sick.

yes	1
not much	2
No, that doesn't bother me	3

35. My head stays clear and calm in an emergency.

always	1
sometimes	2
never	3

36. I seldom speak right out and say what I think, good or bad about peoples' actions.

true, I seldom do this	1
uncertain	2
false, I speak out	3

37. I like the responsibility of handling family money and affairs.

yes	1
sometimes	2
no	3

38. I am confident that I can handle most emergency situations.

true	1
sometimes	2
false, I cannot face emergencies	3

39. I often feel tense and have a ringing in my ears.

yes, I do	1
sometimes	2
no, almost never	3

40. When I hear that people have said bad things about me, I like to meet them face to face.

true	1
uncertain	2
false	3

41. I dream a lot about frightening events.

yes, often	1
sometimes	2
no	3

42. Mice and snakes don't give me the shivers.

true, they don't	1
uncertain	2
false, they do give me the shivers	3

43. I feel self-confident and relaxed.

almost, all the time	1
sometimes	2
hardly ever	3

44. My zest for work is high.

nearly always	1
sometimes	2
hardly ever	3

45. I feel lonely and miserable.

yes, all the time	1
sometimes	2
no, hardly ever	3

46. I hardly ever feel sad and gloomy.

true, I hardly ever feel sad and gloomy	1
sometimes I do	2
false, I'm often very gloomy	3

47. When I wake up in the morning I just don't have enough energy to start the day.

true	1
perhaps	2
false	3

48. I very seldom have moments when my life seems lonely and empty

true	1
uncertain	2
false	3

49. A dark mood of depression, coming on for no reason, is something I hardly ever experience.

true, I don't have such moods	1
uncertain	2
false, I do have moods like that	3

50. I feel that I can cope with most things.

true, I feel that I can cope	1
sometimes	2
false, I don't feel that I can cope	3

51. I need more sleep and almost always wake up tired.

true	1
somewhere in between	2
false	3

52. I get into moods when I feel low and depressed.

often	1
occasionally	2
hardly ever	3

53. I feel worn out and can't get enough rest.

usually	1
sometimes	2
very seldom	3

54. I sleep soundly and wake up full of energy.

true, generally	1
only sometimes	2
never, nowadays	3

55. I worry because I don't do enough about solving my problems.

I often worry	1
sometimes	2
I almost never worry about it	3

56. I tell people how stupid I think their beliefs are and I don't care what they think of me.

yes	1
somewhere in between	2
false	3

57. I know pretty well what worthwhile things I want to do in life.

true	1
somewhere in between	2
false	3

58. I feel too depressed and "useless" to want to talk to people.

true	1
somewhere in between	2
false	3

59. I have a weak stomach and get constipated easily.

true	1
somewhere in between	2
false	3

60. I feel that life is so pointless and silly that I no longer even tell people how I feel.

true	1
somewhere in between	2
false	3

61. I find it easy to keep up cheerful 'small talk' with people.

always	1
sometimes	2
never	3

62. My life has lots of enjoyment and excitement in it.

almost all of the time	1
sometimes	2
almost never	3

63. I find it easy to be relaxed, friendly and cheerful with other people's young children.

almost always	1
sometimes	2
hardly ever	3

64. If people tell me I'm neglectful or not doing my part, I don't really care.

true, I don't care	1
uncertain	2
false, I do care	3

65. I'm happiest alone, away from people.

true	1
in between	2
false	3

66. I enjoy making the effort to go and meet new people.

yes, I do	1
somewhere in between	2
no, I don't	3

67. I find it easy to chat and joke with a person of the opposite sex.

true	1
sometimes	2
false	3

Sometimes, the way people react to their jobs is related to other events that have taken place away from work. We would like to know how many of these serious "life events" have occurred to you during the last 6 months. Please answer YES or NO to the following questions.

In the LAST SIX MONTHS have any of the following happened to you?

(1) Have you been hospitalised or had to take a month or more off work because you became seriously ill or needed an operation?	YES	1
	NO	2
(2) Has a close relative been hospitalised or taken a month or more off work/school because of illness?	YES	1
	NO	2
(3) Has a family member died? (i.e. parent, brother/sister, spouse, child)	YES	1
	NO	2
(4) Has any other close friend or relative died?	YES	1
	NO	2
(5) Have arguments/marital difficulties with your partner worsened?	YES	1
	NO	2
(6) Have you started to have serious problems with someone living in your household?	YES	1
	NO	2
(7) Have you started to have serious problems /arguments with a close friend or relative or neighbour?	YES	1
	NO	2
(8) Have you been suspended or downgraded at work?	YES	1
	NO	2
(9) Have you had a major financial crisis?	YES	1
	NO	2
(10) Have you been involved in a serious accident?	YES	1
	NO	2
(11) Have you been involved in a court case (where you faced a damages claim or criminal charges)?	YES	1
	NO	2
(12) Have any other serious events occurred?	YES	1
	NO	2

SECTION 3: JOB DEMANDS, SUPPORTS AND CONSTRAINTS
PLEASE ANSWER ALL QUESTIONS

The aim of the following questions is to examine the types of demands placed on you at work. After reading each item carefully, please indicate the extent to which you agree with the statement. Circle the numbers to the right of each statement, using the following scale values.

FREQUENCY

1	2	3	4	5
very rarely	sometimes	half the time	often	very often

	FREQUENCY				
	Rarely				Often
	1	2	3	4	5
My job is such that I am required to:					
1. Undertake courses to gain promotion	1	2	3	4	5
2. Cope with a wide variety of activities simultaneously	1	2	3	4	5
3. Spend a good deal of time keeping up with new prison procedures	1	2	3	4	5
4. Carry out duties with insufficient support from management	1	2	3	4	5
5. Perform tasks that I dislike	1	2	3	4	5
6. At time, depending on my duties, undertake more work than I have time to do	1	2	3	4	5
7. Perform duties in which I am unsure of my responsibilities	1	2	3	4	5
8. Perform tasks that I think should be done differently	1	2	3	4	5
9. Spend most of my time performing tasks that are routine and boring	1	2	3	4	5
10. Work under policies and guidelines that at times appear incompatible	1	2	3	4	5
11. Spend time answering unnecessary queries	1	2	3	4	5

12.	Work with other sections of the prison which operate differently	1	2	3	4	5
13.	Complete duties for which the procedures are not clearly defined	1	2	3	4	5
14.	Work with people who make unreasonable demands on me	1	2	3	4	5
15.	Complete certain activities within time limits	1	2	3	4	5
16.	Do work which is outside my sphere of expertise	1	2	3	4	5
17.	Do things that are acceptable by certain supervisors but not by others	1	2	3	4	5
18.	Do a single job for prolonged periods	1	2	3	4	5

In this next section you are asked about the support you get on the job from your colleagues, supervisor(s), Union and the Department of Corrective Services. Please circle below how much you agree or disagree with the following statements:

strongly agree 1
agree 2
disagree 3
strongly disagree 4

		agree			disagree
1.	Supervisors give me a "fair go"	1	2	3	4
2.	The department will do its best to provide me with good working conditions	1	2	3	4
3.	As far as my colleagues are concerned its every man for himself	1	2	3	4
4.	The department will probably not appreciate my efforts at work	1	2	3	4
5.	Most people I meet outside the prison appreciate what I do for a living	1	2	3	4
6.	I'd probably be reluctant to approach my supervisor with a work problem because he might take that as a sign of weakness or incompetence	1	2	3	4
7.	I feel that I will be able to rely on my colleagues when things get difficult at work	1	2	3	4

8.	I feel that I give my colleagues more support than I get back	1	2	3	4
9.	My supervisor would probably stick his neck out for me if the need arose	1	2	3	4
10.	The department would probably be reasonable about granting me leave and time off work	1	2	3	4
11.	The department probably won't care about my general satisfaction at work	1	2	3	4
12.	I feel I could probably rely on a colleague to help me if my work load became too heavy	1	2	3	4
13.	I feel that my supervisor would probably be more interested in a prisoner's story than in mine if a dispute arose	1	2	3	4
14.	The department will provide me with reasonable opportunities for advancement	1	2	3	4
15	I suspect there will be few staff who feel the same way about the job as I do	1	2	3	4
16.	I guess my supervisor would probably be sympathetic if he knew I was having problems at home	1	2	3	4
17.	The department would probably ignore any complaint from me	1	2	3	4
18.	I'm concerned my supervisor might let me down	1	2	3	4
19.	The Union can be relied on for support if the need arises	1	2	3	4
20.	There is probably at least one other employee I could discuss any problems with if I felt the need	1	2	3	4
21.	The department will probably take my opinions into account when it can	1	2	3	4
22.	As far as possible, the Union looks after my safety at work	1	2	3	4
23.	I'm concerned that the staff here don't really support and help each other	1	2	3	4
24.	My supervisor will probably give me constructive feedback about how I'm going	1	2	3	4
25.	My colleagues are easy to talk to and listen to my point of view	1	2	3	4

26. If I had a problem at work I wouldn't approach my supervisor because he probably wouldn't care 1 2 3 4

27. The department provides enough support to staff after violent incidents 1 2 3 4

28. The Union would engage in industrial action or negotiation if I felt I was being unfairly treated at work. 1 2 3 4

In this next section you are asked about the constraints you find as you try to do your job. Please circle below how much you agree or disagree with the following statements:

Does not apply 0
It always helps me do my job well 1
Most of the time it helps me do my job well 2
Sometimes it helps me; other times it hinders me 3
Most of the time it hinders me from doing my job well 4
It always hinders me from doing my job well 5

1. My superiors give me adequate feedback about my performance such that 0 1 2 3 4 5

2. The equipment I use at work is such that 0 1 2 3 4 5

3. My personal relationship my boss is such that 0 1 2 3 4 5

4. The knowledge and experience that my superior has is such that 0 1 2 3 4 5

5. The degree of authority that I have over my work is such that 0 1 2 3 4 5

6. The level of skill and knowledge of the people that work for me is such that 0 1 2 3 4 5

7. I find my job interesting and stimulating such that 0 1 2 3 4 5

8. The general morale of colleagues is such that 0 1 2 3 4 5

9. The amount of pressure that I feel is such that 0 1 2 3 4 5

10. The frequency with which I am involved in making decisions about my job is such that 0 1 2 3 4 5

11. The nature of the differences in status among people in the organization is such that	0	1	2	3	4	5
12. The amount and quality of training I receive(ed) for my job is such that	0	1	2	3	4	5
13. The amount of time I spend at meetings is such that	0	1	2	3	4	5
14. The ways in which money for resources is spent in the public service is such that	0	1	2	3	4	5
15. The number of support staff I have is such that	0	1	2	3	4	5
16. The degree to which I can choose or refuse to work on a project is such that	0	1	2	3	4	5
17. The amount of influence I have with my boss is such that	0	1	2	3	4	5
18. The degree to which work instructions and expectations are clear is such that	0	1	2	3	4	5
19. When changes are made to work organization it happens in ways that	0	1	2	3	4	5
20. The amount of variety in my job is such that	0	1	2	3	4	5
21. The opportunity I have to use my knowledge skills and abilities is such that	0	1	2	3	4	5
22. The quantity and quality of the information I receive from all sources is such that	0	1	2	3	4	5

The following statements are concerned with your support outside work. Please indicate the extent of your agreement or disagreement by circling the appropriate number.

	strongly agree			1
	agree			2
	disagree			3
	strongly disagree			4
1. If I had a problem at work, there would be at least one sympathetic person (friend or family) who would listen and care	1	2	3	4
2. If I needed help with a personal problem there is someone (friend or family) to whom I could turn	1	2	3	4
3. If I got sick no one would care very much or help me out	1	2	3	4

4.	I am generally quite satisfied with my social life	1	2	3	4
5	I feel that my needs for an intimate/romantic relationship are not being met	1	2	3	4
6.	If I were in any trouble I'd be hard pressed to find someone to help me	1	2	3	4
7	I have good friends I can rely on	1	2	3	4
8.	I feel that there are not enough people in my life whom I can share private thoughts and feelings with	1	2	3	4
9.	I have a very supportive partner	1	2	3	4
10.	I have a very supportive family	1	2	3	4

The following statements need only be responded to if you are living in a family. Please circle YES, UNSURE or NO for each statement. If you are not living in a family please move to the next section (No. 4).

1.	My job leaves me enough time to spend with family and friends	YES	UNSURE	NO
2.	I get so involved with my job that I feel a conflict of loyalty between my home and my work	YES	UNSURE	NO
3.	Going to work makes me too tired to enjoy my family life properly	YES	UNSURE	NO
4.	I find it difficult not to take my job home with me	YES	UNSURE	NO
5.	I feel guilty about not spending time with my family	YES	UNSURE	NO
6.	My job places considerable strain on my relationship	YES	UNSURE	NO
7.	I find it difficult to relax and unwind after work	YES	UNSURE	NO

SECTION 4: JOB SATISFACTION

This section contains a set of statements about your satisfaction with your job. Please circle the one number for each statement which best reflects your level of satisfaction (The higher the number, the higher your statisfaction).

HOW SATISFIED ARE YOU WITH:

	Very Dissat-isfied			Neutral			Very Satis-fied
1. The amount of recognition you receive for doing your job	1	2	3	4	5	6	7
2. The information you receive from management as to what is going on in the prison	1	2	3	4	5	6	7
3. Your opportunity to get a better job within the prison	1	2	3	4	5	6	7
4. The amount of pay you receive	1	2	3	4	5	6	7
5. The chance to use your abilities in your job	1	2	3	4	5	6	7
6. The people you talk to at work	1	2	3	4	5	6	7
7. Your chances to get to know other people in your job	1	2	3	4	5	6	7
8. Staffing levels in the prison	1	2	3	4	5	6	7
9. You chance to learn new things in your job	1	2	3	4	5	6	7
10. The amount of change and variety in your job	1	2	3	4	5	6	7
11. The transfer policies within the Corrective Services Department	1	2	3	4	5	6	7
12. The amount of overtime you do	1	2	3	4	5	6	7
13. Your job security	1	2	3	4	5	6	7
14. Having enough time to do your job properly	1	2	3	4	5	6	7
15. The physical conditions at work (e.g. noise, air conditioning)	1	2	3	4	5	6	7

16. Being able to do your job without a supervisor worrying you	1	2	3	4	5	6	7
18. The amount of pressure and stress in your job	1	2	3	4	5	6	7
19. The performance evaluation schemes in the department	1	2	3	4	5	6	7
20. The say you have about the way things are done in your job	1	2	3	4	5	6	7
21. Opportunities for challenging work in your job	1	2	3	4	5	6	7
22. Opportunities to be yourself while at work	1	2	3	4	5	6	7

Listed below are a series of statements that represent possible feelings you might have about working for the Department of Corrective Services. Please indicate the extent to which you agree or disagree with each statement by circling a number.

If you agree strongly with a statement you should circle a number at the upper end of the scale (6 or 7). If you disagree strongly with the statement you should circle a number at the lower end of the scale (1 or 2). If you have moderate feelings about the statement, circle 3, 4 or 5.

	STRONGLY DISAGREE						STRONGLY AGREE
1. I am willing to put in a great deal of effort beyond that normally expected in order to help the Department	1	2	3	4	5	6	7
2. I talk up the Department to my friends as a great organisation to work for	1	2	3	4	5	6	7
3. I feel very little loyalty to the Department of Corrective Services	1	2	3	4	5	6	7
4. I would accept almost any type of job assignment in order to work for the Department	1	2	3	4	5	6	7
5. I find that my values and those of the Department are similar	1	2	3	4	5	6	7

6. I am proud to tell others that I am part of the Corrective Services Department	1	2	3	4	5	6	7
7 I could just as well be working for a different organization as long as the work was similar.	1	2	3	4	5	6	7
8. It would take very little change in my present circumstances to cause me to leave the Corrective Services Department	1	2	3	4	5	6	7
9. I am extremely glad that I chose the Department to work for over other organizations I was considering at the time I joined	1	2	3	4	5	6	7
10 There's not much to be gained by sticking with the Department indefinitely	1	2	3	4	5	6	7
11. Often, I find it difficult to agree with the Department's policies on important matters relating to its employees.	1	2	3	4	5	6	7
12. For me this is the best of all possible organizations for which to work	1	2	3	4	5	6	7
13. I really care about the fate of the Department	1	2	3	4	5	6	7
14. Deciding to work for Corrective Services was a definite mistake on my part	1	2	3	4	5	6	7
15. The Department really inspires the very best in me in the way of job performance	1	2	3	4	5	6	7

SECTION FIVE

ATTITUDES

The statements below describe different attitudes toward prisoners. There are no right or wrong answers, only opinions. Please express your feelings about each statement by indicating the extent to which you agree or disagree by putting a number next to the statement, using the following scale;

1	2	3	4	5
Disagree Strongly	Disagree	Undecided	Agree	Agree Strongly

Rating

1. Prisoners are different from most people _____
2. Only a few prisoners are really dangerous _____
3. Prisoners never change _____
4. Most prisoners are victims of circumstance and deserve to be helped _____
5. Prisoners have feelings like the rest of us _____
6. It is not wise to trust a prisoner too far _____
7. I think I would like a lot of prisoners _____
8. Bad prison conditions just make prisoners more bitter _____
9. Give a prisoner an inch and he'll take a mile _____
10. Most prisoners are stupid _____
11. Prisoners need affection and praise just like everyone else _____
12. You should not expect too much from a prisoner _____
13. Trying to rehabilitate prisoners is a waste of time and money _____
14. You never know when a prisoner is telling the truth _____
15. Prisoners are no better or worse than other people _____
16. You have to be constantly on your guard with prisoners _____
17. In general, prisoners think and act alike _____
18. If you give a prisoner your respect, he'll give you the same _____

Remember the rating is;

1	2	3	4	5
Disagree Stongly	Disgree	Undecided	Agree	Agree Strongly

19. Prisoners only think about themselves _____

20. There are some prisoners I would trust with my life _____

21. Prisoners will listen to reason _____

22. Most prisoners are too lazy to earn an honest living _____

23. I wouldn't mind living next door to an ex-prisoner _____

24. Prisoners are basically mean at heart _____

25. Prisoners are always trying to get something out of somebody _____

26. The values of most prisoners are about the same as most of us _____

27. I would never want one of my children dating an ex-prisoner _____

28. Most prisoners have a capacity for love _____

29. Prisoners are fundamentally immoral _____

30. In general, prisoners are basically bad people _____

31. Most prisoners can be rehabilitated _____

32. Some prisoners are pretty nice people _____

33. I would like associating with some prisoners _____

34. Prisoners respect only brute force _____

35. If a person does well in prison, he should be let out on parole _____

36. Prisoners should be under strict, harsh discipline _____

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to you. For each question, two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer - if you had to make a choice between them.

An example is given below.

JOB A	JOB B
A job requiring work with mechanical most of the day.	A job requiring work equipment with other people most of the day.

1----------2----------(3)----------4----------5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you like working with people and working with equipment equally well, you would circle the number 3, as has been done in the example.

Please answer the following questions.

	JOB A	JOB B
1.	A job where the pay is very good.	A job where there is considerable opportunity to be creative and innovative.

1----------2----------3----------4----------5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
2.	A job where you are often required to make important decisions.	A job with many pleasant people to work with.

1----------2----------3----------4----------5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
3.	A job in which greater responsibility is given to those who do the best work.	A job in which greater responsibility is given to loyal employees who have seniority.

1----------2----------3----------4----------5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
4.	A very routine job.	A job where your co-workers are not very friendly.

1----------2----------3----------4----------5

Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

JOB A | JOB B

5. A job in an organization which is in financial trouble - and might have to close down within the year. | A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

JOB A | JOB B

6. A job with a supervisor who is often very critical of you and your work in front of others. | A job which prevents you from using a number of skills that you worked hard to develop.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

JOB A | JOB B

7. A job with a supervisor who respects you and treats you fairly. | A job which provides constant opportunities for you to learn new and interesting things.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

JOB A | JOB B

8. A job where there is a real chance you could be laid off. | A job with very little chance to do challenging work.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

JOB A | JOB B

9. A job in which there is a real chance for you to develop new skills and advance in the organisation | A job which provides lots of vacation time and excellent fringe benefits.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
10	A job with little freedom and independence for you to do your work in the way you think best.	A job where the working conditions are poor.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
11.	A job with very satisfying teamwork.	A job which allows you to use your skills and abilities to the fullest extent.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
12.	A job which offers little or no challenge	A job which requires you to be completely isolated from co-workers.

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

- - - - - - - - - -

	JOB A	JOB B
13.	A job requiring you to expose yourself to considerable physical danger.	A job located 200 miles from your home & family

1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

This part of the questionnaire asks you to describe your job. Please do not use this part of the questionnaire to show how much you like or dislike your job. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

To what extent does your job require you to work with mechanical equipment?

1	2	3	4	5	(6)	7
Very little; the job requires almost no contacts with mechanical equipment of any kind		Moderately		Very much; the job requires almost constant work with mechanical equipment		

You are to circle the number which is the most accurate description of your job. If, for example, your job requires you to work with mechanical equipment a good deal of the time - but also requires some paperwork - you might circle the number six, as was done in the example above.

Please answer the following questions.

1. How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1	2	3	4	5	6	7
Very little; the job me almost no personal "say" about how and when the the work is done		Moderate autonomy; many things are standardized and not under my control, but I make decisions about the work			Very much; the job gives me almost complete responsibility for deciding how and when work is done	

2. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1	2	3	4	5	6	7
Very little; the job requires me to do the same routine things over and over again		Moderate variety			Very much; the job requires me to do many different things, using a number of different skills and talents.	

3. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1	2	3	4	5	6	7
Not very significant; the outcomes of my work are not likely to have important effects on other people.		Moderately significant			Highly significant; the outcomes of my work can affect other people very important ways.	

4. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing - aside from any "feedback" co-workers or supervisors may provide?

1--------2--------3--------4--------5--------6--------7

Very little; the job itself is set up so I could work forever without finding out how well I am doing	Moderately, sometimes doing the job provides "feedback" to me; sometimes it does not	Very much; the job is set up so that I get almost constant feedback about how well I am doing

5. To what extent does your job involve doing a "whole and identifiable piece of work. That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small piece of work, which is finished by other people?

1--------2--------3--------4--------5--------6--------7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service	My job is a moderate sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome	My job involves doing the whole piece of work from start to finish; the results of my activities are easily seen in the final product or service

Finally,

Listed below are a number of statements which could be used to describe a job. Please indicate whether each statement is an accurate or an inaccurate description of your job. The higher the score, the closer that statement is to accurately describing your job. Write a number in the blank space beside each statement, based on the following scale:

How accurate is the statement in describing your job?

1---------2---------3---------4---------5---------6---------7

Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

ANSWER HERE

____1. The job requires me to use a number of complex or high level skills.

____2. Just doing the work required by the job provides many chances for me to figure out how well I am doing.

____3. The job is quite simple and repetitive.

____4. This job is one where a lot of other people can be affected by how well the work gets done.

____5. The job denies me any chance to use my personal initiative or judgement in carrying out the work.

____6. Most people on this job have a pretty good idea of how well they are performing at work

____7. The job itself provides very few clues about whether or not I am performing well.

____8. The job gives me considerable opportunity for independence and freedom in how I do the work.

____9. The job is arranged so that I do not have a chance to do an entire piece of work from the beginning to the end.

____10. The job itself is not very significant or important in the broader sense of things

____11. The job provides me with the chance to completely finish the pieces of work I begin.

****

Thank you for spending the time to fill in this questionnaire.
Your co-operation is greatly appreciated.

Please return it in the reply-paid envelope provided. Remember that your name or the location of your work should not be written on the questionnaire.

APPENDIX B:

Glossary of Independent Variable Names

TENSION.	Scores on the Tension Scale from the CAQ
EDLEVEL.	Highest level of educational attainment
TOTLEI.	Summed life events scores
LONGWORK.	Length of time working as a prison officer
DEMANDS.	Perceptions of Job Demands
CONSTR.	Perceptions of Job Constraints
WORKSUP.	Perceptions of supports at work
OTHERSUP.	Perceptions of supports out of work
TENXDEM	Tension and Demands interaction
TENXOTH	Tension and Non-work supports interaction
TENXWORK	Tension and Work supports interaction
DEMOTH	Demands and Non-work supports interaction
DEMSUP	Demands and Work supports interaction
SUPCONS	Work supports and constraints interaction
DEMCONS	Demands and Constraints interaction
CONSOTH	Constraints and Non-work supports interaction
DSC	Demands, Work supports and Non-work supports interaction
WORKOTH	Work and Non-work supports interaction

SUMMARY TABLES FOR HEALTH RELATED BEHAVIOURS

Dependent Variable. Number of Visits to the Doctor in previous year.

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.032393	.012302	.144355	2.633	.0088
AGE	.006882	.005514	.085109	1.248	.2129
EDLEVEL	-.023376	.033749	-.036877	-.693	.4890
SEX	.040652	.113290	.019767	.359	.7199
TOTLEI	.032900	.020969	.084086	1.569	.1176
RANK	-.076278	.030458	-.140124	-2.504	.0127
LONGWORK	.005732	.007933	.053331	.723	.4704
(Constant)	1.883176	.300488		6.267	.0000

Mult.R.= .2546 R.Sq.= .0648 AdjRsq= .0462 F= 3.476 P= .001

Dependent Variable. Treatment Reason (minor, persistent minor, major illness)

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.003059	.014399	-.012856	-.212	.8319
AGE	.001594	.006481	.018307	.246	.8059
EDLEVEL	.018588	.039670	.026962	.469	.6397
SEX	.078094	.135354	.034358	.577	.5644
RANK	-.039555	.035930	-.064983	-1.101	.2718
TOTLEI	.027696	.026359	.062347	1.051	.2942
LONGWORK	.024470	.009388	.209343	2.607	.0096
(Constant)	1.198798	.344893		3.476	.0006

Dependent Variable. Number of Visits to Hospital in Previous Year.

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.045836	.038418	.065840	1.193	.2336
AGE	.025376	.017220	.101159	1.474	.1415
EDLEVEL	.016251	.105391	.008264	.154	.8775
SEX	-.104630	.353785	-.016399	-.296	.7676
TOTLEI	-.241371	.065484	-.198841	-3.686	.0003
RANK	.112004	.095114	.066320	1.178	.2398
LONGWORK	-.020415	.024775	-.061220	-.824	.4105
(Constant)	3.491201	.938370		3.720	.0002

Mult R.= .2291 R.Sq.= .0525 Adj.Rsq= .0336 F= 2.778 P= .008

Dependent Variable. Length of Time in Hospital

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.024135	.029749	-.065305	-.811	.4178
AGE	.010974	.010062	.082454	1.091	.2763
EDLEVEL	-.014956	.061352	-.013993	-.244	.8076
SEX	-.105732	.214567	-.029116	-.493	.6225
RANK	-.034754	.055427	-.037452	-.627	.5311
TOTLEI	-.153414	.041593	-.218294	-3.689	.0003
LONGWORK	7.60223E-04	.014472	.004240	.053	.9581
TENXWORK	.002288	.001150	.160286	1.989	.0476
(Constant)	3.460052	.539850		6.409	.0000

Mult R.=.2651 R.Sq.=.0703 Adj.R. Sq= .0478 F= 3.119 P= .002

Dependent Variable. Perceived level of fitness (very fit to unfit)

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.062546	.013201	.266800	4.738	.0000
AGE	-.015400	.005907	-.176183	-2.607	.0095
EDLEVEL	.011182	.036597	.016381	.306	.7602
SEX	-.068914	.129008	-.029467	-.534	.5936
RANK	-.005552	.033282	-.009221	-.167	.8676
TOTLEI	.015240	.024032	.034816	.634	.5264
LONGWORK	.013840	.008437	.118726	1.640	.1019
(Constant)	2.070458	.326638		6.339	.0000

Dependent Variable. Family Stress

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.493883	.074293	.313936	6.648	.0000
AGE	-.044069	.031541	-.077740	-1.397	.1633
EDLEVEL	.473720	.193706	.106597	2.446	.0150
SEX	-.202313	.654722	-.014032	-.309	.7575
TOTLEI	.129919	.125619	.047361	1.034	.3018
RANK	-.647144	.176628	-.169567	-3.664	.0003
LONGWORK	.036618	.045561	.048593	.804	.4222
DEMANDS	.075524	.017146	.228454	4.405	.0000
OTHERSUP	.121781	.039341	.142906	3.096	.0021
WORKSUPP	.127017	.041889	.156569	3.032	.0026
(Constant)	2.579630	1.951132		1.322	.1871

Mult.R= .6580 R.Sq.= .4329 Adj.Rsq= .4153 F= 24.506 P= .000

Total Number of Physical Health Problems.

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.750859	.100239	.364317	7.491	.0000
AGE	.007407	.043425	.009973	.171	.8647
EDLEVEL	.561550	.266696	.096453	2.106	.0360
SEX	-.856618	.900656	-.045351	-.951	.3422
TOTLEI	.430621	.167471	.119826	2.571	.0106
RANK	-.034353	.243199	-.006871	-.141	.8878
LONGWORK	.027316	.062717	.027670	.436	.6634
DEMANDS	.082782	.023571	.191142	3.512	.0005
CONSTR	.121952	.054447	.120353	2.240	.0257
(Constant)	-4.939184	2.604456		-1.896	.0588

Mult R=.5818 Adj.R.Sq.=.3209 F=19.271 p=.001

Equation Number 2 Dependent Variable. Medicines taken in previous two weeks.

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.036566	.068285	-.030383	-.535	.5927
AGE	-.027323	.030607	-.063006	-.893	.3726
EDLEVEL	.192801	.187325	.056712	1.029	.3041
SEX	.637754	.628828	.057821	1.014	.3112
TOTLEI	.036912	.116393	.017590	.317	.7513
RANK	-.359197	.169058	-.123031	-2.125	.0343
LONGWORK	.077757	.044035	.134884	1.766	.0783
(Constant)	8.420493	1.667676		5.049	.0000

Mult.R= .1456 R.Sq.= .0212 Adj.R.Sq.= .0012 F= 1.062 P= .388

Dependent Variable.. Medicines taken in the last year

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.065504	.066125	.054927	.991	.3226
AGE	.043084	.028873	.100261	1.492	.1365
EDLEVEL	.009748	.176619	.002893	.055	.9560
SEX	-.223713	.599071	-.020469	-.373	.7091
TOTLEI	.169631	.110616	.081576	1.534	.1261
RANK	-.418062	.159674	-.144506	-2.618	.0092
LONGWORK	.008432	.041700	.014761	.202	.8399
WORKSUPP	.126401	.033585	.205543	3.764	.0002
(Constant)	3.696086	1.618249		2.284	.0230

Mult R= .3097 R.Sq.= .0959 Adj.R.Sq= .0753 F= 4.642 P= .000

Job Characteristics and Physical Health Symptoms (Illnesses in the Past Two Weeks)

Dependent Variable. Cold/Influenza

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.011969	.009750	.085772	1.228	.2207
AGE	8.02180E-04	.004100	.015667	.196	.8451
EDLEVEL	-2.62807E-04	.025347	-6.659E-04	-.010	.9917
SEX	-.002705	.086598	-.002049	-.031	.9751
RANK	.038561	.023654	.110605	1.630	.1043
TOTLEI	-.007657	.019120	-.027557	-.400	.6892
LONGWORK	-.013934	.006293	-.193110	-2.214	.0277
DEMOTH	1.48342E-04	7.2309E-05	.149073	2.052	.0413
(Constant)	-.027651	.221687		-.125	.9008

Mult R=.2240 R Sq.=.0502 Adj RSq.= .0199 F= 1.657 P=.109

Dependent Variable. High Blood Pressure

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.014171	.011880	-.153521	-1.193	.2341
AGE	-.001812	.002701	-.053504	-.671	.5029
EDLEVEL	-.011670	.016674	-.044707	-.700	.4846
SEX	-.054248	.056790	-.062104	-.955	.3404
RANK	.007665	.015942	.033238	.481	.6311
TOTLEI	-.021069	.012032	-.114643	-1.751	.0812
LONGWORK	.003316	.004136	.069485	.802	.4234
TENXDEM	4.10011E-04	1.6483E-04	.329108	2.488	.0135
(Constant)	.152342	.141852		1.074	.2839

Mult R=.2442 R.Sq=.0596 Adj.R.Sq=.0297 F=1.990 P=.048

Dependent Variable. Hay Fever

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.004261	.005859	.049757	.727	.4678
AGE	-.002058	.002564	-.065504	-.803	.4229
EDLEVEL	.004453	.015801	.018387	.282	.7783
SEX	-.034169	.053846	-.042167	-.635	.5263
RANK	.006589	.014669	.030798	.449	.6537
TOTLEI	-8.91714E-04	.011307	-.005230	-.079	.9372
LONGWORK	4.15058E-04	.003894	.009374	.107	.9152
(Constant)	.125545	.134840		.931	.3527

Mult R=.0884 R.Sq.=.0078 Adj.R.Sq.=-.0197 F=.284 P=.960

Dependent Variable. Sleeping Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.038018	.009490	.254781	4.006	.0001
AGE	.002117	.004060	.038659	.521	.6026
EDLEVEL	.056462	.025023	.133802	2.256	.0249
SEX	-.061676	.085685	-.043678	-.720	.4723
RANK	-.024366	.023247	-.065359	-1.048	.2956
TOTLEI	.049475	.018061	.166530	2.739	.0066
LONGWORK	-.002695	.006181	-.034935	-.436	.6632
WORKSUPP	.011406	.004706	.146889	2.424	.0161
(Constant)	-.308296	.218816		-1.409	.1601

Mult R=.4288 R.Sq=.1839 Adj.R.Sq.= .1579 F= 7.069 P=.000

Dependent Variable. Migraine

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.011719	.007307	.104396	1.604	.1100
AGE	.002519	.003197	.061150	.788	.4316
EDLEVEL	.048517	.019705	.152834	2.462	.0145
SEX	.074467	.067151	.070102	1.109	.2685
RANK	-.034512	.018294	-.123059	-1.887	.0604
TOTLEI	.046820	.014100	.209486	3.321	.0010
LONGWORK	.004627	.004856	.079723	.953	.3415
(Constant)	-.276513	.168158		-1.644	.1013

Mult R= .3195 R.Sq.= .1021 Adj.R.SQ=.0771 F=4.092 P=.000

Dependent Variable. Eyestrain

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.009056	.007166	.085698	1.264	.2075
AGE	.002859	.003066	.073743	.933	.3519
EDLEVEL	.032430	.018896	.108521	1.716	.0873
SEX	-.052379	.064703	-.052379	-.810	.4190
RANK	-.023664	.017554	-.089633	-1.348	.1789
TOTLEI	-.007199	.013638	-.034216	-.528	.5981
LONGWORK	.003660	.004668	.066981	.784	.4337
WORKSUPP	.008337	.003553	.151605	2.346	.0197
(Constant)	-.160414	.165233		-.971	.3326

Mult R=.2685 R.Sq=.0721 Adj.R.Sq=.0425 F=2.437 P=.015

Dependent Variable. Ulcers

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-9.65771E-04	.003809	-.017225	-.254	.8000
AGE	-7.29981E-04	.001667	-.035485	-.438	.6618
EDLEVEL	-.021318	.010272	-.134451	-2.075	.0390
SEX	.001808	.035006	.003407	.052	.9589
RANK	-.004904	.009537	-.035010	-.514	.6075
TOTLEI	7.72905E-04	.007350	.006924	.105	.9163
LONGWORK	4.54628E-04	.002531	.015681	.180	.8576
(Constant)	.120168	.087660		1.371	.1716

Mult.R=.1479 R.Sq.=.0219 Adj.RSq.= -.0053 F=0.806 P=.583

Dependent Variable. Indigestion

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.016977	.008352	.135837	2.033	.0431
AGE	.002261	.003607	.049310	.627	.5313
EDLEVEL	-.010439	.022373	-.029537	-.467	.6412
SEX	-.001498	.075809	-.001266	-.020	.9843
RANK	-.019659	.021280	-.062961	-.924	.3565
TOTLEI	.022125	.016110	.088913	1.373	.1709
LONGWORK	.003198	.005527	.049485	.579	.5634
DEMANDS	.003795	.001803	.139373	2.105	.0363
(Constant)	-.252392	.214526		-1.177	.2405

Mult.R=.2935 RSq.=.0861 Adj.RSq.=.0570 F=2.957 P=.004

Dependent Variable. Stomach Pains

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.008963	.005926	.101929	1.512	.1317
AGE	1.32097E-05	.002593	4.094E-04	.005	.9959
EDLEVEL	-.004762	.015982	-.019149	-.298	.7660
SEX	-.026622	.054463	-.031993	-.489	.6254
RANK	-.014722	.014837	-.067015	-.992	.3220
TOTLEI	.017884	.011436	.102149	1.564	.1191
LONGWORK	.002214	.003938	.048694	.562	.5745
(Constant)	.038279	.136384		.281	.7792

Mult.R=.1934 RSq.=.0374 Adj.RSq.=.0107 F=1.399 P=.206

Dependent Variable. Hearing Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.009630	.006421	.099889	1.500	.1349
AGE	.007887	.002737	.222982	2.882	.0043
EDLEVEL	.006972	.016751	.025571	.416	.6776
SEX	-.012772	.057364	-.013999	-.223	.8240
RANK	.027459	.015791	.114005	1.739	.0833
TOTLEI	.018253	.012216	.095095	1.494	.1364
LONGWORK	-.006558	.004155	-.131559	-1.579	.1157
CONSTR	-.021211	.012317	-.442348	-1.722	.0863
SUPCONS	.001180	4.8442E-04	.623032	2.436	.0156
(Constant)	-.333114	.150992		-2.206	.0283

Mult.R=.3570 RSq.=.1274 Adj.RSq.=.0960 F=4.057 P=.000

Dependent Variable. Back Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.003304	.038528	.025436	.086	.9317
AGE	.002937	.003580	.061622	.820	.4129
EDLEVEL	-.001005	.022284	-.002735	-.045	.9641
SEX	-.026316	.075572	-.021410	-.348	.7280
RANK	.022579	.021116	.069582	1.069	.2860
TOTLEI	.051496	.016714	.199132	3.081	.0023
LONGWORK	.001225	.005479	.018242	.224	.8233
OTHERSUP	.014330	.012531	.197179	1.144	.2539
DEMANDS	-.004845	.005164	-.171233	-.938	.3490
TENXOTH	-.003960	.001389	-.820154	-2.850	.0047
TENXDEM	.001456	6.3040E-04	.830809	2.310	.0217
(Constant)	-.156198	.353561		-.442	.6590

Mult.R=.4253 RSq.=.1808 Adj.RSQ.=.1445 F=4.977 P=.000

Dependent Variable. Chest Pains

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.005722	.005736	.068734	.998	.3195
AGE	.001101	.002453	.036062	.449	.6538
EDLEVEL	-.001763	.015118	-.007488	-.117	.9073
SEX	.037215	.051717	.047242	.720	.4724
RANK	.001423	.014045	.006843	.101	.9194
TOTLEI	.009095	.010904	.054876	.834	.4050
LONGWORK	2.76689E-05	.003737	6.428E-04	.007	.9941
CONSTR	.006180	.002717	.149253	2.275	.0238
(Constant)	-.147816	.130798		-1.130	.2595

Mult.R=.2072 R.Sq.=.0429 Adj.RSq.=.0124 F=1.407 P=.194

Dependent Variable. Heart Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.007244	.004138	-.195811	-1.751	.0812
AGE	-1.98047E-04	.001097	-.014591	-.181	.8569
EDLEVEL	-.002050	.006756	-.019599	-.304	.7618
SEX	.001196	.023106	.003417	.052	.9587
RANK	-.001876	.006277	-.020294	-.299	.7653
TOTLEI	-.004481	.005078	-.060835	-.882	.3784
LONGWORK	.001883	.001667	.098443	1.130	.2596
TENXOTH	3.78226E-04	1.6047E-04	.275041	2.357	.0192
(Constant)	.021852	.057731		.379	.7054

Mult R=.1791 RSq.=.0321 Adj.RSq.=.0012 F=1.039 P=.407

Dependent Variable. Shortness of breath

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.011783	.010071	-.156072	-1.170	.2431
AGE	-.002295	.002138	-.082855	-1.073	.2841
EDLEVEL	.007510	.013230	.035176	.568	.5708
SEX	-.004826	.044967	-.006754	-.107	.9146
RANK	.007522	.012648	.039879	.595	.5526
TOTLEI	.019597	.009554	.130371	2.051	.0413
LONGWORK	.001400	.003270	.035866	.428	.6689
TENXDEM	6.76017E-04	2.0554E-04	.663439	3.289	.0011
DSTS	-1.48731E-05	6.1545E-06	-.319255	-2.417	.0164
(Constant)	-.034909	.112268		-.311	.7561

Mult R=.3546 RSq.=.1258 Adj.R.Sq=.0943 F=3.996 P=.000

Dependent Variable. Tremors

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.002481	.002069	.081984	1.199	.2315
AGE	-6.54111E-04	9.0516E-04	-.058907	-.723	.4706
EDLEVEL	.002424	.005579	.028320	.434	.6643
SEX	-.007490	.019011	-.026152	-.394	.6939
RANK	.001339	.005179	.017713	.259	.7962
TOTLEI	-.001315	.003992	-.021815	-.329	.7422
LONGWORK	3.23801E-04	.001375	.020692	.236	.8140
(Constant)	.014166	.047607		.298	.7663

Mult R=.0994 RSq.=.0099 Adj.RSq.=-.0176 F=.359 P=.925

Dependent Variable. Asthma

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.003486	.003237	-.073269	-1.077	.2825
AGE	-.001664	.001416	-.095328	-1.175	.2412
EDLEVEL	.004118	.008729	.030610	.472	.6375
SEX	-.024495	.029746	-.054409	-.823	.4110
RANK	9.95942E-04	.008104	.008380	.123	.9023
TOTLEI	.009180	.006246	.096920	1.470	.1429
LONGWORK	.001342	.002151	.054549	.624	.5333
(Constant)	.104724	.074488		1.406	.1610

Mult R=.1379 R.Sq.=.0190 Adj.RSq.=-.0082 F=.697 P=.674

Dependent Variable. Kidney Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.003166	.003845	.104609	.823	.4110
AGE	6.44777E-04	8.8701E-04	.058066	.727	.4680
EDLEVEL	.002829	.005464	.033052	.518	.6051
SEX	-.011400	.018738	-.039806	-.608	.5435
RANK	-.005420	.005083	-.071679	-1.066	.2873
TOTLEI	.001278	.004135	.021203	.309	.7576
LONGWORK	-9.93073E-04	.001349	-.063459	-.736	.4625
TENXWORK	-3.34092E-04	1.3035E-04	-.249233	-2.563	.0110
TENXOTH	2.62565E-04	1.3017E-04	.233391	2.017	.0448
(Constant)	-.016198	.046715		-.347	.7291

Mult R=.2414 R.Sq.=.0583 Adj.RSq.=.0244 F=1.719 P=.085

Dependent Variable. Nervous and Tense

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.001085	.001448	-.050611	-.749	.4543
AGE	-2.24297E-04	6.3364E-04	-.028511	-.354	.7236
EDLEVEL	.003133	.003905	.051663	.802	.4232
SEX	-.003242	.013308	-.015978	-.244	.8077
RANK	-.004118	.003626	-.076883	-1.136	.2571
TOTLEI	.007226	.002794	.169277	2.586	.0103
LONGWORK	7.64982E-04	9.6234E-04	.068999	.795	.4274
(Constant)	.012469	.033326		.374	.7086

Mult R=.1826 RSq.= .0333 Adj.RSq.=.0065 F=1.242 P=.280

Dependent Variable. Skin Trouble

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.015084	.006897	.147710	2.187	.0297
AGE	-.001943	.003018	-.051862	-.644	.5203
EDLEVEL	.011305	.018600	.039144	.608	.5439
SEX	-.081601	.063387	-.084440	-1.287	.1992
RANK	-.002038	.017269	-.007990	-.118	.9061
TOTLEI	-.003929	.013310	-.019322	-.295	.7681
LONGWORK	-.003068	.004584	-.058105	-.669	.5039
(Constant)	.167153	.158732		1.053	.2933

Mult. R=.1823 RSq.=.0332 Adj.RSq.=.0064 F=1.237 P=.283

Dependent Variable. Rundown

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.032797	.007492	.277402	4.378	.0000
AGE	-.004081	.003278	-.094086	-1.245	.2143
EDLEVEL	.033309	.020205	.099621	1.649	.1005
SEX	-.111860	.068856	-.099979	-1.625	.1055
RANK	.004181	.018758	.014155	.223	.8238
TOTLEI	.035784	.014458	.152014	2.475	.0140
LONGWORK	-.001193	.004979	-.019520	-.240	.8108
(Constant)	.054283	.172427		.315	.7532

Mult R=.3859 RSq.=.1489 Adj.RSq.=.1253 F=6.300 P=.000

Dependent Variable. Arthritis

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.001059	.005839	.012366	.181	.8562
AGE	.003496	.002471	.111270	1.415	.1583
EDLEVEL	.021672	.015226	.089494	1.423	.1559
SEX	.038115	.052211	.047036	.730	.4661
RANK	-.005159	.014144	-.024113	-.365	.7156
TOTLEI	.018770	.011354	.110091	1.653	.0995
LONGWORK	.005724	.003759	.129282	1.523	.1290
OTHERSUP	-.010588	.003268	-.220975	-3.240	.0014
(Constant)	-.063591	.137152		-.464	.6433

Mult R=.2872 RSq.=.0825 Adj.RSq.=.0532 F=2.821 P=.005

Dependent Variable. Muscular Aches

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.094140	.038705	-.665445	-2.432	.0157
AGE	4.13422E-04	.003938	.007965	.105	.9165
EDLEVEL	.041878	.024575	.104676	1.704	.0896
SEX	-.008705	.082761	-.006503	-.105	.9163
RANK	.029662	.023254	.083924	1.276	.2033
TOTLEI	.027664	.017590	.098215	1.573	.1170
LONGWORK	-4.46226E-04	.006034	-.006100	-.074	.9411
DEMANDS	-.010922	.005562	-.354375	-1.964	.0507
TENXDEM	.002172	6.7872E-04	1.137336	3.200	.0016
(Constant)	.382286	.359906		1.062	.2892

Mult R=.3917 RSq.=.1534 Adj.RSq.=.1230 F=5.034 P=.000

Dependent Variable. Loss of Appetite

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.007975	.005837	.090694	1.366	.1731
AGE	-4.68183E-04	.002492	-.014511	-.188	.8511
EDLEVEL	.039036	.015353	.156982	2.543	.0116
SEX	-.027864	.052553	-.033486	-.530	.5964
RANK	.010193	.014533	.046400	.701	.4837
TOTLEI	.014117	.011237	.080634	1.256	.2102
LONGWORK	-.005497	.003790	-.120901	-1.450	.1482
CONSTR	-.008917	.006976	-.203872	-1.278	.2024
DSC	9.94855E-06	3.9139E-06	.407104	2.542	.0116
(Constant)	-.033509	.134796		-.249	.8039

Mult R=.3484 RSq.=.1214 Adj.RSq.=.0897 F=3.836 P=.000

Dependent Variable. Dizziness

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.001388	.005602	-.017181	-.248	.8046
AGE	.001339	.002397	.045184	.559	.5770
EDLEVEL	.009921	.014795	.043436	.671	.5031
SEX	.054987	.050674	.071944	1.085	.2789
RANK	.006562	.013828	.032521	.475	.6355
TOTLEI	-.004883	.010736	-.030368	-.455	.6496
LONGWORK	.001519	.003658	.036382	.415	.6783
DEMSUP	7.62758E-05	3.5622E-05	.144314	2.141	.0332
(Constant)	-.151717	.127971		-1.186	.2369

Mult R=.1697 RSq.=.0288 Adj.RSq.=-.0022 F=.930 P=.492

Job Characteristics and Physical Health Symptoms (Illnesses in the Year)

Dependent Variable. Cold/Influenza

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.008447	.011514	-.048862	-.734	.4639
AGE	.006526	.005038	.102893	1.295	.1964
EDLEVEL	.009854	.031051	.020157	.317	.7512
SEX	-.025037	.105817	-.015304	-.237	.8132
RANK	-.039006	.028828	-.090314	-1.353	.1772
TOTLEI	-.015494	.022219	-.045016	-.697	.4862
LONGWORK	-.020605	.007652	-.230509	-2.693	.0076
(Constant)	.646397	.264983		2.439	.0154

Mult R=.2446 RSq.=.0598 Adj.RSq.=.0337 F=2.291 P=.028

Dependent Variable. High Blood Pressure

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.003152	.007475	.028484	.422	.6736
AGE	.003127	.003271	.076998	.956	.3401
EDLEVEL	.006014	.020159	.019217	.298	.7657
SEX	-.134646	.068700	-.128567	-1.960	.0511
RANK	.015000	.018716	.054251	.801	.4236
TOTLEI	.021287	.014425	.096606	1.476	.1413
LONGWORK	-.005022	.004968	-.087753	-1.011	.3131
(Constant)	.068792	.172036		.400	.6896

Mult R=.1819 RSq.=.0331 Adj.RSq.=.0062 F=1.231 P=.286

Dependent Variable. Hay Fever

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.022256	.009647	.154328	2.307	.0219
AGE	-.002447	.004222	-.046246	-.580	.5627
EDLEVEL	.061015	.026018	.149614	2.345	.0198
SEX	-.012326	.088666	-.009032	-.139	.8895
RANK	.014577	.024155	.040460	.603	.5467
TOTLEI	.013993	.018618	.048736	.752	.4530
LONGWORK	.001775	.006412	.023809	.277	.7821
(Constant)	-.045283	.222033		-.204	.8386

Mult R=.2268 RSq.=.0514 Adj.RSq.=.0251 F=1.952 P=.062

Dependent Variable. Sleeping Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.016307	.011180	.098700	1.459	.1459
AGE	-.004321	.004892	-.071282	-.883	.3780
EDLEVEL	-.009216	.030153	-.019724	-.306	.7601
SEX	-.004407	.102756	-.002818	-.043	.9658
RANK	-.005307	.027994	-.012857	-.190	.8498
TOTLEI	-.001880	.021576	-.005716	-.087	.9306
LONGWORK	.012998	.007430	.152138	1.749	.0815
(Constant)	.333722	.257317		1.297	.1958

Mult R=.1716 RSq.=.0295 Adj.RSq=.0025 F=1.093 P=.368

Dependent Variable. Migraine

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.014753	.011159	.090261	1.322	.1873
AGE	2.86416E-04	.004883	.004776	.059	.9533
EDLEVEL	.015955	.030093	.034517	.530	.5965
SEX	.039718	.102554	.025678	.387	.6989
RANK	-.004742	.027939	-.011613	-.170	.8653
TOTLEI	.010623	.021534	.032641	.493	.6222
LONGWORK	-.002117	.007416	-.025045	-.285	.7755
(Constant)	.149087	.256812		.581	.5621

Mult R=.1104 R.Sq=.0122 Adj.RSq.=-.0152 F=.444 P=.874

Dependent Variable. Eyestrain

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.015676	.011097	.094879	1.413	.1590
AGE	.001187	.004793	.019582	.248	.8046
EDLEVEL	-.039208	.029727	-.083914	-1.319	.1884
SEX	.031330	.100729	.020038	.311	.7560
RANK	-.004047	.028276	-.009804	-.143	.8863
TOTLEI	.009061	.021406	.027545	.423	.6724
LONGWORK	.011394	.007344	.133364	1.551	.1221
DEMANDS	.005176	.002395	.143801	2.161	.0317
(Constant)	-.147274	.285044		-.517	.6058

Mult R=.2771 RSq.=.0768 Adj.RSq.=.0474 F=2.609 P=.009

Dependent Variable. Ulcers

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.008104	.004324	-.127979	-1.874	.0621
AGE	-7.73734E-04	.001850	-.033302	-.418	.6761
EDLEVEL	.007346	.011401	.041024	.644	.5199
SEX	.014379	.039040	.023995	.368	.7130
RANK	-.001366	.010592	-.008636	-.129	.8975
TOTLEI	.017193	.008229	.136367	2.089	.0377
LONGWORK	.001057	.002816	.032285	.375	.7077
WORKSUPP	.006206	.002144	.188338	2.895	.0041
(Constant)	-.012544	.099698		-.126	.9000

Mult R=.2433 RSq.=.0592 Adj.RSq.=.0292 F=1.975 P=.050

Dependent Variable. Indigestion

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.004872	.010749	.031851	.453	.6508
AGE	.004720	.004516	.084111	1.045	.2969
EDLEVEL	-.005436	.027833	-.012569	-.195	.8453
SEX	-.096732	.095469	-.066832	-1.013	.3119
RANK	-.022080	.025844	-.057784	-.854	.3937
TOTLEI	-.027494	.020645	-.090285	-1.332	.1841
LONGWORK	-.003856	.006891	-.048756	-.560	.5763
WORKOTH	5.00549E-04	2.3397E-04	.150751	2.139	.0334
(Constant)	.177031	.239341		.740	.4602

Mult R= .1975 RSq.=.0390 Adj.RSq.=.0084 F=1.274 P=.257

Dependent Variable. Stomach Pain

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.035195	.010463	.228045	3.364	.0009
AGE	-.004264	.004459	-.075303	-.956	.3398
EDLEVEL	.059734	.027235	.136862	2.193	.0292
SEX	-.015288	.093110	-.010468	-.164	.8697
RANK	.007042	.025397	.018263	.277	.7818
TOTLEI	-.006057	.019818	-.019710	-.306	.7602
LONGWORK	.001785	.006789	.022367	.263	.7928
DSC	3.85926E-05	1.2119E-05	.899773	3.184	.0016
DEMCONS	-8.05617E-04	2.9348E-04	-.784937	-2.745	.0065
(Constant)	.150683	.241514		.624	.5333

Mult R=.3231 RSq.=.1044 Adj.RSq.=.0721 F=3.237 P=.001

Dependent Variable. Hearing Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.014639	.008349	.118356	1.753	.0808
AGE	-1.64155E-04	.003654	-.003617	-.045	.9642
EDLEVEL	.025667	.022517	.073379	1.140	.2554
SEX	-.088757	.076735	-.075829	-1.157	.2485
RANK	.007576	.020905	.024517	.362	.7173
TOTLEI	.002594	.016113	.010535	.161	.8722
LONGWORK	.003625	.005549	.056675	.653	.5142
(Constant)	.027935	.192157		.145	.8845

Mult R=.1851 Adj.RSq.=.0343 Adj.RSq.=.0074 F=1.277 P=.262

Dependent Variable. Back Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.020638	.011110	.124912	1.858	.0644
AGE	.009877	.004862	.162936	2.032	.0432
EDLEVEL	.013255	.029964	.028368	.442	.6586
SEX	-.079717	.102111	-.050985	-.781	.4357
RANK	-.039169	.027818	-.094890	-1.408	.1604
TOTLEI	-.012738	.021441	-.038722	-.594	.5530
LONGWORK	-.013663	.007384	-.159930	-1.850	.0654
(Constant)	.093033	.255703		.364	.7163

Mult R= .2039 RSq.=.0416 Adj.RSq.=.0150 F=1.562 P=.147

Dependent Variable. Chest Pains

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.015793	.012132	.120513	1.302	.1942
AGE	.003845	.003683	.079973	1.044	.2975
EDLEVEL	.012404	.022706	.033470	.546	.5854
SEX	-.053294	.077627	-.042975	-.687	.4930
RANK	-7.84411E-04	.021100	-.002396	-.037	.9704
TOTLEI	.020856	.016429	.079931	1.269	.2055
LONGWORK	-2.98234E-04	.005603	-.004401	-.053	.9576
TENXWORK	.001214	5.3990E-04	.209143	2.248	.0254
(Constant)	-.220589	.193894		-1.138	.2563

Mult R=.3594 RSq.=.1292 Adj.RSq.=.1014 F=4.655 P=.000

Dependent Variable. Heart Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.001162	.002938	-.027245	-.395	.6929
AGE	7.76224E-04	.001269	.049622	.612	.5413
EDLEVEL	-.010574	.007870	-.087704	-1.344	.1803
SEX	-.012295	.026665	-.030474	-.461	.6451
RANK	.003191	.007485	.029961	.426	.6702
TOTLEI	-.003151	.005667	-.037119	-.556	.5787
LONGWORK	-7.48733E-04	.001944	-.033964	-.385	.7005
DEMANDS	.001459	6.3414E-04	.157063	2.301	.0222
(Constant)	-.047457	.075458		-.629	.5300

Mult R=.1683 RSq.=.0283 Adj.RSq.=-.0026 F=.914 P=.505

Dependent Variable. Tremors

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.020827	.005838	.236856	3.567	.0004
AGE	6.86852E-04	.002522	.021289	.272	.7856
EDLEVEL	-.017688	.015640	-.071131	-1.131	.2592
SEX	.021461	.052994	.025791	.405	.6858
RANK	.011548	.014876	.052566	.776	.4383
TOTLEI	8.96148E-04	.011262	.005119	.080	.9366
LONGWORK	-.002207	.003864	-.048546	-.571	.5683
DEMANDS	.002819	.001260	.147154	2.237	.0262
(Constant)	-.266338	.149963		-1.776	.0769

Mult R=.3128 RSq.=.0978 Adj.RSq.=.0691 F=3.402 P=.001

Dependent Variable. Asthma

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.006540	.004301	.103283	1.521	.1296
AGE	9.62063E-05	.001882	.004141	.051	.9593
EDLEVEL	.018182	.011600	.101531	1.567	.1183
SEX	-.028298	.039529	-.047223	-.716	.4747
RANK	.001697	.010769	.010727	.158	.8749
TOTLEI	-.008726	.008300	-.069213	-1.051	.2941
LONGWORK	-1.28956E-04	.002858	-.003938	-.045	.9641
(Constant)	-.020351	.098988		-.206	.8373

Mult R=.1489 RSq.=.0222 Adj.RSq.=-.0050 F=.817 P=.574

Dependent Variable. Kidney Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	-.001813	.002859	-.042520	-.634	.5266
AGE	.001372	.001251	.087707	1.097	.2738
EDLEVEL	.016516	.007710	.136983	2.142	.0331
SEX	.001600	.026274	.003965	.061	.9515
RANK	-.013053	.007158	-.122545	-1.824	.0694
TOTLEI	.005785	.005517	.068156	1.049	.2953
LONGWORK	.002329	.001900	.105651	1.226	.2214
(Constant)	-.059798	.065795		-.909	.3643

Mult R=.2168 RSq.=.0470 Adj.RSq.=.0205 F=1.776 P=.093

Dependent Variable. Nerves/Tense

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	9.08793E-05	.006475	.001519	.014	.9888
AGE	-8.14683E-05	.001717	-.003712	-.047	.9622
EDLEVEL	.005794	.010572	.034252	.548	.5841
SEX	-.012657	.036157	-.022359	-.350	.7266
RANK	-.008982	.009823	-.060100	-.914	.3614
TOTLEI	.009223	.007946	.077440	1.161	.2468
LONGWORK	.001953	.002608	.063140	.749	.4547
TENXOTH	5.46800E-04	2.5111E-04	.245898	2.178	.0304
(Constant)	-.043718	.090341		-.484	.6289

Mult R=.3058 RSq.=.0935 Adj.RSq.=.0646 F=3.237 P=.002

Dependent Variable. Liver Problems

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	8.33517E-04	.002098	.027541	.397	.6915
AGE	2.10068E-04	8.8018E-04	.018918	.239	.8116
EDLEVEL	-.007946	.005438	-.092845	-1.461	.1452
SEX	-.007021	.018448	-.024516	-.381	.7038
RANK	.006355	.005183	.084056	1.226	.2212
TOTLEI	-.003702	.003988	-.061431	-.928	.3542
LONGWORK	-7.62807E-04	.001349	-.048745	-.565	.5724
DEMANDS	1.80488E-04	5.7300E-04	.027373	.315	.7530
DSC	3.90658E-06	1.0413E-06	.464473	3.752	.0002
CONSOTH	-2.43602E-04	7.5209E-05	-.362640	-3.239	.0014
(Constant)	.009391	.054695		.172	.8638

Mult R=.3008 RSq.=.0905 Adj.RSq.=.0540 F=2.478 P=.008

Dependent Variable. Skin Trouble

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.014530	.007513	.129434	1.934	.0543
AGE	9.56721E-04	.003288	.023229	.291	.7713
EDLEVEL	.027334	.020262	.086104	1.349	.1786
SEX	.100391	.069051	.094505	1.454	.1472
RANK	-.030759	.018812	-.109676	-1.635	.1033
TOTLEI	.018997	.014499	.084999	1.310	.1913
LONGWORK	.003245	.004993	.055905	.650	.5164
(Constant)	-.171759	.172916		-.993	.3215

Mult R=.2248 RSq.=.0505 Adj.RSq.=.0242 F=1.916 P=.067

Dependent Variable. Rundown

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.131834	.038584	.779461	3.417	.0007
AGE	-.003678	.004892	-.059263	-.752	.4529
EDLEVEL	-.010868	.030397	-.022722	-.358	.7210
SEX	.070489	.103411	.044041	.682	.4961
RANK	-.038954	.028952	-.092186	-1.345	.1797
TOTLEI	-.036939	.022492	-.109693	-1.642	.1018
LONGWORK	.008808	.007503	.100711	1.174	.2415
WORKOTH	7.96010E-04	4.2365E-04	.216793	1.879	.0614
TENXCONS	-.005586	.001570	-.717773	-3.558	.0004
DEMSUP	6.20889E-04	2.1108E-04	.560965	2.941	.0036

TENXDEM	-9.83963E-04	4.7755E-04	-.431036	-2.060	.0404
(Constant)	.063954	.292779		.218	.8273

Mult R=.3076 RSq.=.0946 Adj.RSq.=.0545 F=2.357 P=.009

Dependent Variable. Shortness of Breath

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.020855	.009957	.140509	2.094	.0372
AGE	7.93369E-04	.004357	.014568	.182	.8557
EDLEVEL	.038330	.026854	.091318	1.427	.1547
SEX	-.194357	.091514	-.138375	-2.124	.0347
RANK	.006261	.024931	.016884	.251	.8019
TOTLEI	.004097	.019216	.013865	.213	.8313
LONGWORK	-.006284	.006617	-.081879	-.950	.3432
(Constant)	.212486	.229166		.927	.3547

Mult R=.2147 RSq.=.0461 Adj.RSq.=.0196 F=1.740 P=.100

Dependent Variable. Arthritis

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.014444	.007522	.130514	1.920	.0560
AGE	.002892	.003292	.071210	.878	.3805
EDLEVEL	2.46278E-05	.020286	7.869E-05	.001	.9990
SEX	-.028758	.069133	-.027460	-.416	.6778
RANK	.013373	.018834	.048366	.710	.4783
TOTLEI	-.012100	.014516	-.054912	-.834	.4053
LONGWORK	-.002210	.004999	-.038626	-.442	.6588
(Constant)	-.083538	.173119		-.483	.6298

Mult R=.1444 RSq.=.0209 Adj.RSq.=-.0063 F=.767 P=.616

Dependent Variable. Muscular Aches

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.005186	.011841	.029946	.438	.6618
AGE	5.54774E-04	.005181	.008731	.107	.9148
EDLEVEL	3.04004E-05	.031933	6.207E-05	.001	.9992
SEX	.050975	.108823	.031105	.468	.6399
RANK	-.014305	.029647	-.033063	-.483	.6299
TOTLEI	-.029433	.022850	-.085360	-1.288	.1989
LONGWORK	-.001337	.007869	-.014930	-.170	.8652
(Constant)	.483344	.272512		1.774	.0773

Mult R=.0958 RSq.=.0092 Adj.RSq.=-.0183 F=.334 P=.938

Dependent Variable. Loss of Appetite

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.024828	.009521	.173241	2.608	.0097
AGE	-.004645	.004166	-.088341	-1.115	.2659
EDLEVEL	-.014452	.025678	-.035659	-.563	.5741
SEX	-.148074	.087506	-.109183	-1.692	.0919
RANK	-.023796	.023839	-.066460	-.998	.3191
TOTLEI	.008303	.018374	.029100	.452	.6517
LONGWORK	-8.21315E-04	.006328	-.011083	-.130	.8968
(Constant)	.486468	.219131		2.220	.0273

Mult R=.2540 RSq.=.0645 Adj.RSq.=.0385 F=2.482 P=.018

Dependent Variable. Dizziness

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
TENSION	.009278	.009472	.067963	.980	.3282
AGE	.005372	.004008	.107247	1.340	.1813
EDLEVEL	.014763	.024700	.038238	.598	.5506
SEX	.171408	.084699	.132677	2.024	.0441
RANK	-7.99434E-04	.022945	-.002344	-.035	.9722
TOTLEI	-.010960	.018419	-.040322	-.595	.5523
LONGWORK	-.002398	.006098	-.033964	-.393	.6945
OTHERSUP	.012778	.005301	.167275	2.410	.0167
(Constant)	-.502860	.222494		-2.260	.0247

Mult R=.2237 RSq.=.0500 Adj.RSq.=.0197 F=1.652 P=.111