

Editor's Note: The two articles that follow are from scholars in the United Kingdom. The article by Vivienne Brunsten, Steve Wilson, and Louise Woodward went through the regular peer review process employed by the *International Fire Service Journal of Leadership and Management (IFSJLM)*. As such, it follows the same American Psychological Association (APA) style requirements as other articles published in the journal.

The second article co-authored by Ferhana Hashem and Jacqueline Lilly, is reprinted as it appeared in our sister journal in the United Kingdom, *Fire, Safety, Technology, & Management (FST&M)*, published in association with The Fire Service College, Moreton-in-Marsh, England, and the Institution of Fire Engineers. *FST&M* uses the Harvard reference style, not the APA style.

In each issue of *IFSJLM* one article from a recent issue of *FST&M* will be reprinted. In turn, an article from each issue of *IFSJLM* will appear in *FST&M*. We wish to thank Ms. Rosie Bennett, Managing Editor of *FST&M*, for her help in establishing this research cross-fertilization practice and her support and advice in the establishment of *IFSJLM*.

IFSJLM actively solicits articles on fire leadership and management from academicians and practitioners globally. We hope this section of the journal, aptly called "Global Connections," expands over the years as we build theory that impacts fire service leadership and management worldwide.

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Stress in Union Officials: An Issue for Managerial Concern?

Abstract

This study examines stress levels in, and a range of stressors experienced by, officials from a trade union within the fire and rescue service (n = 85). Findings indicate dissatisfaction with aspects of the work of union officials. Additionally, respondents exhibited excessive levels of stress resulting from the service's organisational structure and their role within it. The benefits of the union role to the service are noted; and it is suggested that consideration be given to effecting change in organisational structure, climate, and practice in the fire and rescue service, and to improving support for union officials.

Introduction

The stress, both physiological and psychological, to which firefighters are subject in their everyday role is well documented and has generated a vast literature (e.g. Brunsten et al., 2003; Regehr et al., 2000; Baker & Williams, 2001; Wagner et al., 1998). Stress among firefighters can be generated by a diverse range of sources including sleep disturbance (Murphy et al., 1999), environmental conditions such as heat (Brenner et al., 1998), exposure to chemical and biological hazards (Markowitz, 1989; Malek et al., 2003), and organisational factors (Brunsten et al., 2003). Firefighters further face the additional stress resultant from attending traumatic events, and again this has received much attention in the academic literature (see Hill & Brunsten, 2003; Brown et al., 2002; Beaton et al., 1999; Fullerton et al., 1992). Studies related to stress in fire organisations, and the wider emergency services, have tended to focus on 'front end' operational staff with scant attention being paid to other roles within these organisations. For example, there is only a very limited literature on control room staff (for exceptions see Brunsten et al., 2003; Wastell & Newman, 1996), and on officials in trade unions and other staff representation organisations. The latter is surprising given that many union officials remain operational and are therefore not only subject

to stressors arising from their additional union-related workload but also to the same stressors as other fire service personnel. This dual role places officials in a position of increased vulnerability to stress related problems.

The adverse impact of stress on physical health is well established; stressed workers typically display a range of health and behaviour problems including headaches, insomnia and exhaustion (Kalimo et al., 1987; McLean, 1980). In addition, the associated physiological impact can exacerbate certain conditions such as hypertension (Vrijkotte et al., 2000) and increase the risk of developing cardiovascular disease (Bosma et al., 1998; Rosch & Theorell, 1996). Stress also has been shown to increase susceptibility to infectious disease (Cohen et al., 1991; Cohen & Williamson, 1991). The psychological distress arising from stress can also precipitate levels of anxiety that result in mental impairment or clinical depression (Sperry, 1993). There is also a danger that some individuals may use maladaptive coping strategies in an attempt to alleviate their job-related distress, such as alcohol (Boxer & Wold, 1993) and substance abuse (Schuster, 1993). Stress in operational staff not only has health implications for the individuals concerned, it may also affect public safety. Stress has been shown to result in

impairments in performance of complex tasks (Berkun, 2000), job performance (Srivastava & Krishna, 1991) and may also detrimentally affect risk assessment judgements (Quartermain, Stone, & Charbonneau, 1996).

Methods

Questionnaires

In this survey, a range of questionnaires were used. They included The Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986) designed to measure the risk of burn-out for those with demanding occupations; and The General Health Questionnaire-28 (GHQ-28; Goldberg & Williams, 1988) which is a measure of general health functioning. Finally, the Occupational Stress Indicator (OSI; Cooper, Sloan & Williams, 1989) was used to measure individual levels of non-traumatic stress specifically related to work. The OSI is designed to be used across a wide range of occupations with published norms available for groups as diverse as psychologists, factory workers, company directors and nurses. This means that comparisons can be made in scores across a general population. There are a number of sub-scales within the OSI. For this study, the subscales of Sources of Stress, Job Satisfaction, Coping Strategies and Effects of Stress on health were used. All measures used were established as having sound psychometric properties. Additionally, questions were devised to gather information about general demographic and biographical information. Respondents also were asked questions relating to their recent health history.

The questionnaire also included a free response section in which respondents were given the opportunity to comment upon anything that they felt was significant to the research. This section of the questionnaire was analysed using thematic analysis. The questionnaire was distributed to all officials within the participating trade union.¹ A total of 200 questionnaires were distributed and 85 were returned (43% response rate).

Sample Characteristics

The occupational split of the sample was 91 percent fire fighters and 9 percent control room staff. The gender split was 88 percent male and 12 percent female. The mean number of years respondents had been serving in the service was 21 (range = 6 to 32 years); and the mean number of years spent as union officials was 14 (range = 2 to 27 years).

Findings

General Health of the Sample

The number of days absent from work in the previous year ranged from zero (30%) to 180 (1%). The mean number of days off due to illness was four. Despite physical health being a well-recognised aspect of fire service roles, 36 percent of the sample reported being a smoker, with 1 percent reporting they smoke forty cigarettes per day. The average number of units of alcohol² drunk per week was 25, which is above the national average range between zero (5%) and 84 units (1%). In terms of physical health, 54 percent of the sample reported above average levels of physical symptomatology of stress (compared to levels found in the general population), such as headaches, insomnia and exhaustion.

A maximum score of 28 can be obtained within the GHQ. Scores over six can be taken as indicating higher than normal levels of psychological morbidity. The average score of respondents was seven, ranging from a minimum score of zero to a maximum of 28. In total, 49 percent of the sample were scoring seven and above, which indicates evidence of adverse psychological health.

Evidence of Stress and Pressure

Respondents were asked if they experienced additional stress due to their role as a union representative. Ninety-four per cent reported that they believed this to be the case. It is unclear, however, whether this was the result of their increased workload, the effect of the additional responsibility, or other issues. Hours spent on union business at work varied considerably, with 4 percent reporting their role added no further hours to their load but one percent reporting it added as many as 60 hours (mean = 18). The number of hours spent on union related matters at home (i.e. in their own personal time) ranged from one percent reporting they spent none of their personal time on union related work and one percent reporting they spent up to 72 hours of personal time (mean = 18). Given that 91 percent of respondents reported they were allowed time during work for union business, there still remains a high percentage of personal time spent on union work. Indeed, the most stressful part of being a staff representative was reported to be the lack of time available to do the work (54%). Other notable aspects of the work considered to be "very stressful" by respondents were the handling of discipline cases (28%) and over-tiredness (21%).

In relation to personal attitudes of union representatives, 58 percent claimed that they felt no frustration with work relating from their union role. For 13 percent, however, this was not the case and frustration did arise as a result of their role. When asked whether they had become 'more callous towards people' since becoming a union representative, 34 percent reported they felt that this was the case with over a fifth of the sample feeling this strongly. In addition, 75 percent reported they did not 'really care what happens to some union members.' Sixty-eight percent disagreed that they were 'positively influencing other people's lives' through working as a representative. This weariness and emotional numbing may be a form of psychological defence or coping strategy. Similar responses are frequently seen in those suffering from traumatic stress (Monson, Price, & Rodriguez, 2004; Feeny, Zoellner, Fitzgibbons, & Foa, 2000). It may also be the result of compassion fatigue, which has been seen in professions having a supportive and nurturing role (e.g., therapists and counsellors; see Cerney, 1995; Jacobson, 2004). This seems a plausible explanation given that aspects of the union official role have distinct similarities to other supportive and mentoring occupations. Responses such as these also indicate a degree of job dissatisfaction with the union role. When job satisfaction was measured directly, 75 percent of the sample scored below the mean score seen in the general population. This is notable as there is a direct relationship between levels of job satisfaction and stress. Those experiencing stress usually have negative attitudes towards their work (Cooper, Sloan and Williams, 1989).

Sources of Stress

Results indicate that the organisational management structure and processes were felt to be the principle contributors to occupational stress. A number of specific structural factors were identified as sources of stress.

Factors Intrinsic to the Job: Intrinsic stress factors, which originate from the fundamental nature of the job, include aspects such as the amount and scope of duties, hours, variety, and responsibility. Seventy-nine per cent of respondents reported stress related to the very nature of their work. A weak but significant relationship also existed between adverse psychological health and factors intrinsic to the job ($r=0.362$, $p=0.01$). This indicates that as pressure increased because of occupational factors, psychological health decreased.

Organisational Structure and Climate: Sources of organisational stress can emanate from structural design and process features, as these contribute to the psychological 'feel' of an organisation (Sperry, 1993). Respondents' data suggested that this was a significant source of perceived stress, with 80 percent scoring above normal. Detriments in physical health and the pressures derived from the organisational structure were found to correlate mildly but significantly ($r=0.308$, $p<0.05$). This suggests that as stress related to the organisational structure increased, there was a corresponding deterioration in physical health. A similar pattern is seen with respect to psychological health where a mild but significant correlation was found between adverse psychological health and the pressures experienced as a result of the organisational structure ($r=0.284$, $p<0.05$).

Work Based Relationships: Working within the fire service, particularly as a union official, demands a high degree of contact with colleagues and management. Relationships with superiors and especially peers can be a valuable source of support and coping (Regehr et al., 2000). However, relationships with peers and superiors in this instance were reported as a major source of stress by over 90 percent of respondents. A mild but significant correlation between psychological health functioning and the pressures felt from work-based relationships was found ($r=0.390$, $p<0.05$). This finding suggests that as pressure builds, psychological health begins to deteriorate. Stress resulting from work-based relationships was echoed in terms of a lack of satisfaction, as 64 percent of respondents reported dissatisfaction with working relationships. However, it should also be noted that 24 percent of the respondents reported levels of satisfaction above the norm. Trade union officials clearly have complex working relationships with colleagues. At times, they will be representing staff who hold senior ranks to themselves and will become privy to information not normally held at their own rank. At other times, they will have to negotiate on the behalf of others with these same staff.

Career and Achievement: The need to achieve personal and career success can be a great source of satisfaction or, if obstructed, a major source of stress. Within the sample, 93 percent of the survey participants scored below expected levels, relative to the general population, on their satisfaction with achievement, value, and growth. This suggests a strong sense of feeling undervalued in their work and of perceptions of having little opportunity for career advancement. Additionally, 52 percent of respondents reported above average levels

of stress related to career and achievement opportunities within the fire service. It was unclear whether this was felt to be related in any way to their union role.

Home-Work Interface: There is a complex relationship between stress experienced within the workplace and that experienced within personal life (McLean, 1980). It is a bi-directional relationship with sources of stress at work affecting home life and vice versa. The need to balance home and work in and of itself acts as a stressor (Kelloway, Gottlieb, & Barham, 1999). This appeared to be a major issue among the respondents, with 89 percent scoring at levels above the average score seen in the general population.

Sources of Coping

A range of coping styles were evident in the sample. Coping styles included both emotion-focused and problem-focused. Included were strategies such as the use of social support, logic, involvement and engagement with the problem, and task directed strategies such as reorganisation of workloads. The dominant coping strategy reported was the use of social support, with many individuals relying on social interaction and support from others as a means of coping with stress. This is unsurprising given the close proximity that fire service personnel work in and the strong personal relationships that develop as a function of organisational aspects of the service such as the watch culture (see Hill & Brunnsden, 2003). Regehr et al. (2000) found that perceived support is an important determinant of perceived distress. They also found that depression scores were negatively correlated with all types of perceived support: employer, union, family, spouse and friends. Social support can take many different forms with even the mere existence of supportive relationships acting to facilitate an individual's ability to cope with stress (Lazarus, 1966). There is good cause to improve the levels of support offered to union officials by both peers and service management.

Factors Relating to Burnout

Although the majority of the respondents reported that their work as a union official did not make them frustrated, 51 percent did report feelings of being 'worn out' by the work. This appeared to have an impact on the way that they were able to interact with union members. A large minority of respondents reported feeling that they treated some members as if they were impersonal objects, and that their attitudes were becoming hardened and callous. More reassuringly, there was still a strong sense of feeling energetic as reported by over half of the respondents.

Qualitative Analysis

The final section of the study offered respondents the chance to comment upon anything that they felt was significant to the research. When these comments were subjected to a thematic analysis, a number of themes emerged. The themes were the role of union official, impact on home life, Fire and Rescue Service management, diversity issues, and control room staff.³

The Role of Union Official: A number of respondents commented upon the positive aspects of an official's role. For example, it was reported that the role could be very rewarding and enjoyable, offering the opportunity to be an effective

team builder and player. However, a number of more negative themes, and their resultant impact, emerged from the data. Specifically, there was the perception of an expectation from fire service management for the union representative to be constantly available. Related to this, the magnitude of the workload shouldered by officials was viewed as overwhelming and their efforts were felt to be unappreciated by both management and members.

Respondents also reported a feeling of being 'caught' between management, the union management, and their members. This was perceived as difficult and frustrating, contributing to officials' psychological strain and overload. It was frequently stated that communication between the union and management was strained, with some respondents feeling penalised for undertaking the role of official. People also reported feeling trapped in the role because no other person was willing to take up the position of official. This created feelings of a lack of control. This has implications for health as high psychological demand coupled with low control is seen as a risk factor for ill health (Karasek & Theorell, 1990). Additionally there was a perception that peers within the service can underestimate union work, hold it in low esteem, and consequently offer little support. These factors all contributed to a feeling of isolation as a result of the role.

Impact on Home Life: There was a high level of reported tension between work and home life. The volume of union work and the way in which it impinged upon family time was an issue for many respondents. This extra work appeared to have two main aspects-- unfinished paperwork and a high volume of phone calls at inconvenient hours. A number of respondents commented upon a need for adequate working facilities, within both the union and the service, such as dedicated office facilities to reduce the need for working at home. Inadequate workspace has a considerable impact on individuals. Some respondents reported that performing union duties had led to a noticeable increase in their levels of stress, which was then exacerbated by a lack of available support. For some, the build up of stress and pressure became so severe that it necessitated the recourse to more formal support in the form of counselling. Feelings of anxiety and "tearfulness" were also reported in respondents' comments. Some respondents also expressed the worry that union officials were at risk of suffering from other stress related illnesses, including depression. However, it should be emphasised that this was not directly measured in this study.

FRS Management: A variety of issues were presented relating to management style and politics within the fire service. A strong sense of frustration with fire service management was expressed. Respondents related their frustrations to perceptions and accounts of aggressive styles of management.⁴ Respondents indicated that this aggressive management style prompted apathy and fear from the union's wider membership. Some respondents reported feeling that management often "ignored" the work undertaken by union officials by showing no interest in their work or role. This perceived lack of appreciation from both peers and management is likely to act as a stressor in and of itself. For example, Siegrist (1996, 2001) has suggested that such perceived imbalances in efforts and rewards can create a state of emotional distress leading to adverse health outcomes. Imbalances between efforts and rewards are commonly seen in public service occupations, and in occupations having a high degree of human interaction (Tsutsumi &

Kawakami, 2004); both of which describe the fire service. Tsutsumi & Kawakami (2004) suggest that this is an area in which organisational change and cooperative attitudes from management can result in genuine improvements in both stress-related symptoms of staff and amounts of sick leave taken.

Diversity Issues: Harassment cases were reported to be extremely stressful. Such cases span across all underrepresented groups, and include women, black and ethnic minorities, and gay and lesbian members. In addition to harassment generally being highlighted as a particularly pertinent issue, the service was perceived as being highly sexist in its structure and outlook. This has been reported elsewhere in the literature with negative attitudes towards female personnel being found in both fire service chiefs (Pantoga, 1977) and the wider service (Floren, 1980, 1981). It was felt that these attitudes could also spill over into the union itself where communication and emotions were being perceived as being male dominated. This has been found to be the case in unions in other occupations (Charles, 1983).

Control Room Staff: Some respondents reported a particular problem for control room staff, when acting as union representatives. Control room staff expressed difficulty in separating their staff role from their union representative role. This was less of an issue for firefighters due to the multifaceted nature of their work behaviours and also their shift patterns. Firefighters' shift-work patterns allow for large blocks of time away from the main role, which can then be dedicated to union work. These blocks of time were unavailable to control staff. Respondents also noted that it was difficult for control room staff to obtain promised trade union leave because of regularly encountered staff shortages.

Concluding Comments

The physical and psychological costs of elevated stress levels are known to be severe and can manifest themselves in a variety of other maladaptive responses (Monat & Lazarus, 1991). Responses from a survey of 85 union officials confirm that they not only suffer stress, but also exhibit physical and psychological difficulties as a result. Stress related problems affect the way they function with adverse consequences for their workplace interactions and in their personal and private relations. Recognition of the unique stress factors that confront union officials is especially relevant for management. Union officials play a vital role in establishing and maintaining positive relations with Fire and Rescue Service personnel. Union membership has been found to bring positive benefits to workers (Corneo, 1995). Management opposition to unions, including punitive treatment of officials and anti-union propaganda, have been found to be counter-productive and to result in increased union loyalty (Corneo, 1995). Conversely, positive relations with unions and management-union co-operation in strategic planning have been shown to yield benefits to the organisation (Mills, 1978). It is therefore in management's own best interest to address the issue of stress in union officials. Additionally, fire service managers have the opportunity and the legal responsibility (see Davies, 2003) to address the problem of stress among trade union officials since they are also FRS employees. If they are to be effective, management must find ways to improve the position of union officials and to help reduce the stress resultant from their multi-faceted roles. The results will not only benefit union officials, but also the wider service.

There is evidence for the efficacy of management interventions in stress reduction. The exact nature of interventions that have been found to be successful differs across occupations, work patterns, pay levels and even gender (see Tsutsumi & Kawakami, 2004). Specific interventions were outside the scope of the current study. However, regardless of the exact nature of interventions, a sustained level of commitment is needed from management to show any significant impact (Irie et al., 2003; Tsutsumi et al., 2003). Union commitment to health and safety issues has been found to positively impact on the protection of workers' occupational health and safety (Chen & Chan, 2004), and on workforce implementation of related statutory regulations (Walters, 1995a, 1995b). It is ironic that fire service union officials appear to be suffering so greatly themselves.

Notes

¹In order to protect the confidentiality of the sample, the name of the trade union is not identified.

²A unit of alcohol is eight grams. This is the amount contained in a small glass of wine, half a pint of ordinary beer, or in a standard measure of spirits (Department of Health, 1995).

³All qualitative responses reported here have been paraphrased to ensure anonymity and confidentiality. All paraphrasing remains true to original responses in intention and content.

⁴See Corneo (1995) for acknowledgement of such behaviours as deliberate strategies of opposition to unions.

References

- Baker, S.R., & Williams, K. (2001). Relation between social problem-solving appraisals, work stress, and psychological distress in male firefighters. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 17(4), 219-229.
- Beaton, R., Murphy, S., Johnson, C., Pike, K., & Corneil, W. (1999). Coping responses and post traumatic stress symptomatology in urban fire service personnel. *Journal of Traumatic Stress*, 12(2), 293-308.
- Berkun, M. (2000). Performance decrement under psychological stress. *Human Performance in Extreme Environments*, 5(1), 92-97.
- Bosma, H., Peter, R., Siegrist, J., & Marmot, M. (1998). Two alternative job stress models and the risk of coronary heart disease. *American Journal of Public Health*, 88, pp. 68-74.
- Boxer, P.A., & Wild, D. (1993). Psychological distress and alcohol use among firefighters. *Scandinavian Journal of Environmental Health*, 19, 121-125.
- Brenner, I., Shek, P. N., Zamecnik, J., & Shephard, R. J. (1998). Stress hormones and the immunological responses to heat and exercise. *International Journal of Sports Medicine*, 19(2), 130-143.
- Brown, J., Mulhern, G., & Joseph, S. (2002). Incident-related stressors, locus of control, coping, and psychological distress among firefighters in Northern Ireland. *Journal of Traumatic Stress*, 15(2), 161-168.
- Brunsdon, V., Woodward, L., & Regel, S. (2003). Occupational stress and posttraumatic reactions in fire-fighters and control room staff. *Fire Safety, Technology and Management*, 8(3), 11-14.
- Cerney, M.S. (1995). Treating the "heroic treaters." In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 131-148). Philadelphia: Taylor & Francis.
- Charles, N. (1983). Trade union censorship. *Women's Studies International Forum*, 6(5), 525-533.
- Chen, M., & Chan, A. (2004). Employee and union inputs into occupational health and safety measures in Chinese factories. *Social Science and Medicine*, 58, 1231-1245.
- Cohen, S., Tyrrell, D.A.J., & Smith, A.P. (1991). Psychological stress and susceptibility to the common cold. *New England Journal of Medicine*, 325, 606-612.
- Cohen, S., & Williamson, G.M. (1991). Stress and infectious disease in humans. *Psychological Bulletin*, 109, 5-24.
- Cooper, C.L., Sloane, S.J., & Williams, S. (1989). *The Occupational Stress Indicator*. Windsor: NFER-Nelson.
- Corneo, G. (1995). Social custom, management opposition, and trade union membership. *European Economic Review*, 39, 275-292.
- Davies, M. (2003). The stress of working. *Fire Safety, Technology and Management*, 8(3), 15-16.
- Department of Health. (1995). *Sensible drinking: The report of an inter-departmental working group*. Norwich, Her Majesty's Stationery Office.
- Feeny, N. C., Zoellner, L. A., Fitzgibbons, L. A., & Foa, E. B. (2000). Exploring the roles of emotional numbing, depression, and dissociation in PTSD. *Journal of Traumatic Stress*, 13(3), 489-498.
- Floren, T.M. (1980). Women firefighters speak – Part one of a survey of the nation's female firefighters. *Fire Command*, 47(12), 22-24.
- Floren, T. M. (1981). Women firefighters speak – Part two. *Fire Command*, 48(1), 22-25.
- Fullerton, R., McCarroll, J., Ursano, R., & Wright, K. (1992). Psychological responses of rescue workers: Fire fighters and trauma. *American Journal of Orthopsychiatry*, 62, 371- 377.
- Goldberg D., & Williams P. (1988) *A user's guide to the general health questionnaire*. NFER-Nelson, Windsor.
- Hill, R., & Brunsdon, V. (2003) Surviving disaster: Firefighters as victims – preliminary findings. *Fire Safety, Technology and Management*, 8(3), 21-24.
- Irie, M., Tsutsumi, A. & Kobayashi, F. (2003). Effort-reward imbalance and workers' health in a period of structural economic change. *Sangyo Igaku Journal*, 26, 69-74.
- Jacobson, J. M. (2004). Compassion fatigue among employee assistance program counselors. *Dissertation Abstracts International Section A: Humanities & Social Sciences*, 65(4-A),1540.
- Kalimo, R., El-Batawi, M.A., & Cooper, C.L. (Eds.) (1987). *Psychosocial factors at work and their relation to health*. Geneva: World Health Organisation.
- Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Kelloway, E. K., Gottlieb, B. H., & Barham, L. (1999). The source, nature, and direction of work and family conflict: A longitudinal investigation. *Journal of Occupational Health Psychology*, 4(4), 337-346.
- Lazarus, R. (1966). *Psychological stress and the coping process*. Toronto: McGraw-Hill.
- Malek, M. D. A., Mearns, K., & Flin, R. (2003). Stress and well-being in firefighters: A review of the literature. *Fire Safety, Technology and Management*, 8(3), 1-6.
- Markowitz, J.S. (1989). Long-term psychological distress among chemically exposed firefighters. *Behavioral Medicine*, 15, 75-83.

- Maslach C., & Jackson S.E. (1986) *Maslach burnout inventory manual* (2nd ed). Palo Alto, CA: Consulting Psychologists Press.
- McLean, A. (1980). *Work stress*. New York, NY: Addison and Wesley.
- Mills, L. (1978). The role of trade unions in strategic planning. *Long Range Planning*, 11, 78-82.
- Monat, A., & Lazarus, R. S. (1991). *Stress and coping: An anthology* (3rd ed.). New York: Columbia University Press.
- Monson, C. M., Price, J. L., & Rodriguez, B. F. (2004). Emotional deficits in military-related PTSD: An investigation of content and process disturbances. *Journal of Traumatic Stress*, 17 (3), 275-279.
- Murphy, S. A., Beaton, R. D., Cain, K., & Pike, K. (1999). Gender differences in fire-fighter job stressors and symptoms of stress. *Women's Health*, 22(2), 55-69.
- Pantoga, F. (1977). Women firefighters – a survey. *Fire Chief*, 21, 51-54.
- Quartermain, D., Stone, E. A., & Charbonneau, G. (1996). Acute stress disrupts risk assessment behavior in mice. *Physiology and Behavior*, 59(4-5), 937-940.
- Regehr, C., Hill, J., & Glancy, G. D. (2000). Individual predictors of traumatic reactions in firefighters. *Journal of Nervous & Mental Disease*, 188(6), 333-339.
- Rosch P. J., & Theorell, T. (1996). Job strain and the prevalence and outcome of coronary artery disease. *Circulation*, 9, 1139-40.
- Schuster, C. L. (1993). Alcohol abuse and dependence. In J.P. Kahn (Ed.), *Mental health in the workplace: A practical psychiatric guide* (pp. 366-387). New York: Van Nostrand Reinhold.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1, 27-41.
- Siegrist, J. (2001). A theory of occupational stress. In J. Dunham (Ed.), *Stress in the workplace: Past, present and future* (pp. 52-66). London: Whurr Publishers Ltd.
- Sperry, L. (1993). *Psychiatric consultation in the workplace*. Washington, DC: American Psychiatric Press Inc.
- Srivastava, A. K. & Krishna, A. (1991). A test of inverted "U"-hypothesis of stress- performance relationship in the industrial context. *Psychological Studies*, 36(1), 34-38.
- Tsutsumi, A., Nagami, M., Kamogawa, M., Kawakami, N., & Morimoto, K. (2003). Effort-reward imbalance and sick leave: A one-year follow up observation. *Sangyo Eiseigakuzasshi*, 43 (supplement), 248.
- Tsutsumi, A. & Kawakami, N. (2004). A review of empirical studies on the model of effort-reward imbalance at work: Reducing occupational stress by implementing a new theory. *Social Science and Medicine*, 59, 2335-2359.
- Vrijkotte, T. G. M., van Doornen, L. J. P., & de Geus, E. J. C. (2000). Effects of work stress on ambulatory blood pressure, heart rate, and heart rate variability. *Hypertension*, 35, pp. 880- 886.
- Wagner, D., Heinrichs, M., & Ehlert, U. (1998). Prevalence of symptoms of posttraumatic stress in German professional firefighters. *American Journal of Psychiatry*, 155, 1727-1732.
- Walters, D. (1995a). Employee representation and occupational health and safety in Britain: 1974-1994. *Journal of Loss Prevention in the Process Industries*, (5), 307-312.
- Walters, D. (1995b). Employee representation and occupational health and safety: The significance of Europe. *Journal of Loss Prevention in the Process Industries*, 8(6), 313-318.
- Wastell D., & Newman, M. (1996). Information system design, stress and organisational change in the ambulance services: A tale of two cities. *Accounting, Management and Information Technologies*, 6(4), 283-300.

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