

# A Comparative Investigation of the Predictors of Work-related Psychological Well-being within Police, Fire and Ambulance Workers

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The recognition that employers are legally and morally responsible for their worker's psychological health has produced legislation and litigation both within New Zealand and overseas. This paper empirically compares the experiences of organisational and operational work hassles, work-family conflict, neuroticism, job satisfaction, and work-related psychological well-being within three emergency services populations. A total of 723 respondents from the New Zealand Police, Fire and Ambulance Services returned completed self-report questionnaires. The police respondents reported more minor work stressors (hassles) and higher levels of work-family conflict and intrinsic job satisfaction. The ambulance service respondents reported significantly higher levels of work-related psychological well-being. Work-family conflict, neuroticism and job satisfaction all significantly predicted work well-being in the hypothesised directions and these associations were similar within all three services. The implications for the treatment of occupational stress and the considerations for work-family conflict experienced by these emergency service workers are discussed.

Investigations of the influence of work experiences upon individual health outcomes have traditionally focused upon occupations that are perceived to offer a high level of risk to their employees. Accordingly, both the emergency and armed services, and especially the police services, have received considerable scrutiny due to the demanding aspects of these jobs upon their workers (e.g., Kroes, Margolis, & Hurrell, 1974). Similarly, other occupations have received scrutiny due to the serious consequences of adverse job performance, such as aircraft pilots, air traffic controllers (Reiche, Kirchner, & Laurig, 1971; Shouksmith & Burrough, 1988) and train drivers (Lewis, 1987). The methodological argument for the individual examination of such occupations has focused upon

occupation-specific characteristics and has even been extended to specific localised characteristics (e.g., the Royal Ulster Constabulary: Hamilton, 1995). This argument has the most strength when the focus of investigation is placed upon operational work demands, which are often influenced by local climates and specific regulations.

Comparative well-being investigations between the emergency service occupations are scarce. The justifications for conducting these comparative investigations include the ability to apply organisational-specific interventions to a second similar occupational group: providing the opportunities to evaluate intervention outcomes, costs, and effectiveness across occupations (e.g., Brough & Smith, 2002). For example, Beaton, Murphy,

Johnson, Pike, and Corneil (1998) found a high degree of comparability in duty-related incident stressors experienced by a combined sample of U.S. firefighters and paramedics. Miller (1995) also described similarities in the experiences of trauma encountered by police, fire and paramedic professionals and discussed the implications for effective psychotherapeutic approaches to manage individual health outcomes for these workers. It therefore appears that occupational stress and psychological well-being experienced by the primary emergency service groups are largely comparable. This suggestion contradicts earlier literature that identified the uniqueness of work demands experienced by emergency service workers, especially that of police officers (e.g., Kroes et al., 1974).

The early police stress literature linked police work to a number of non-work adverse consequences such as divorce rates, alcoholism, heart disease and suicide (e.g., Fell, Richard, & Wallace, 1980; Kroes, 1976; Maynard & Maynard, 1982) and furthermore, suggested that police-work was unique in eliciting such adverse outcomes. Recent investigations of police officers' psychological well-being have compared the influence of traumatic operational incidents versus frequently occurring minor work demands (i.e., work hassles). In contrast to the earlier findings, contemporary police stress researchers have demonstrated that organisational work hassles (e.g., red tape, paperwork, missing meals) can have a comparable,

if not a greater impact on psychological well-being and job performance, as compared to operational incidents (Brough, 2002, 2004; Hart, Wearing, & Headey, 1995). It is of both theoretical and practical interest to test whether this reported influence of organisational work hassles on psychological outcomes extends beyond the police occupation to produce comparable results with other emergency service workers.

### *Psychological well-being*

The recognition that employers are legally and morally responsible for their worker's psychological health has produced legislation and litigation both within New Zealand and overseas. Recent changes in New Zealand legislation for example, such as the Health and Safety in Employment Amendment Bill (2003), have heightened public awareness that stress is an occupational hazard that employers must take reasonable steps to prevent (Mansell, 2003). The annual costs to organisations in claim payouts, insurance premiums and lost productivity has now reached record highs (see O'Driscoll & Brough, 2003). By elucidating the process of psychological stress and well-being within high-risk employees (i.e., emergency service workers) this research contributes to our understanding of the management and the reduction of occupational stress.

Psychological well-being encompasses both short-term and long-term mental functioning and includes both positive health (e.g., positive affect and morale) and negative health (e.g., anxiety, depression and fatigue; O'Driscoll & Brough, 2003). Warr's (1994) theory of psychological well-being is a widely used taxonomy and describes a state of well-being occurring from the two constructs of arousal and pleasure. Affective states such as depression, anxiety, enthusiasm and contentment occur due to differing levels of perceived arousal and pleasure. The measurement of these (and other) affective states provides a composite evaluation of psychological well-being (Warr 1999; Warr, Butcher, Robertson, & Callinan, 2004).

An accurate evaluation of work-related psychological well-being should include a variety of characteristics from an individual's work and non-work life

(Brough & O'Driscoll, 2005; Warr, 1994). Consequently, the influence of work-family conflict in the prediction of psychological well-being is receiving increasing attention (e.g., O'Driscoll, Brough, & Kalliath, 2004). Work-family conflict was defined by Greenhaus and Beutell (1985, p.77) as "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (or family) role is made more difficult by virtue of participation in the family (or work) role". Consequently, researchers of occupational stress are increasingly including work-family conflict variables in their estimates of both individual health and work performance (see Brough & O'Driscoll, 2005, for a review).

The inclusion of neuroticism in the evaluation of psychological well-being has also received recent attention (Goddard, Patton, & Creed, 2004; Oliver & Brough, 2002). It is argued that neuroticism acts as a negativity bias, spuriously inflating the associations between self-report measures of stressors and strain (Watson, Pennebaker, & Folger, 1987). The negativity bias occurs due to the fact that individuals with high levels of neuroticism have a tendency to respond to self-report methodologies with a negative perception, resulting in subsequent high levels of adverse outcomes, when compared with individuals who have lower levels of neuroticism (Watson & Clark, 1984). Partialling out the effects of neuroticism has been recommended (Brief, Burke, George, Robinson, & Webster 1988), although this point remains debatable (Spector, Zapf, Chen, & Frese, 2000). Mansell and Brough (2005) investigated the role of neuroticism in the prediction of psychological well-being with two New Zealand populations (dentists and customs workers). Mansell and Brough demonstrated that neuroticism had only a direct influence (and not a confounding role) in the relationship between perceived job characteristics and psychological well-being and therefore, including neuroticism in estimates of psychological well-being is warranted.

Finally, job satisfaction is becoming increasingly recognised as a substantial predictor of work-related psychological well-being. Job satisfaction has a long and popular history of inclusion in psychological research and especially within occupational stress investigations (Judge & Church, 2000; Locke, 1976). Traditionally utilised as a criterion measure, researchers have recently demonstrated that job satisfaction is a significant predictor of psychological well-being and of various other job characteristics (e.g., promotion opportunities, interpersonal relations and supervision; O'Driscoll & Brough, 2003). The differing relationships between the two components of job satisfaction (intrinsic and extrinsic satisfaction) and these outcomes have also been acknowledged (Warr, 1994). Brough and Frame (2004), for example, demonstrated that only intrinsic job satisfaction (and not extrinsic) was a direct predictor of turnover in a sample of New Zealand police officers.

This paper describes research that addresses some of these methodological and theoretical discussions. This research compares the levels of work-related psychological well-being in employees within the three primary New Zealand emergency services (Fire, Police and Ambulance workers). Both descriptive and analytical relationships between work characteristics and specific psychological constructs are evaluated and compared across the three services. The ability of the research variables to predict psychological well-being, after controlling for service is also assessed. In accordance with the literature, this research expects to find:

- H1: Levels of work hassles, neuroticism and work-family conflict will be negatively associated with work well-being. Levels of job satisfaction will be positively associated with work well-being.
- H2: No significant differences in the levels of both operational and organisational work hassles will exist between the three emergency services.
- H3: Both neuroticism and work-family conflict will be direct and negative significant predictors of work-related psychological well-being.

## Method

### Participants and procedure

Five hundred individuals from each of the three New Zealand primary emergency service organisations (Police, Fire and Ambulance) were invited to participate with this research. Research participants in each service were randomly sampled according to three organisational divisions: 75% operational staff, 15% managerial staff and 10% communication and administration staff. These ratios generally reflect the proportion of staff in each of these divisions and ensure that the majority of each sample were operational officers. Sampling occurred across all geographical areas (i.e., national samples of each service) and responses from all these geographical areas were proportionally obtained. All participation was voluntary and confidential and involved the completion of a self-report questionnaire. Completed questionnaires were returned directly to the researcher.

A total of 723 useable responses were received (response rate of 48%). Approximately equal response rates were achieved by the three services (Ambulance  $N = 253$  (51% response rate), Fire  $N = 241$  (48%) and Police  $N = 229$  (46%)). Three quarters (74%) of all the respondents were male, specifically: 91% of the firefighters, 75% of the police officers and 59% of the ambulance officers. These figures are generally indicative of the operational gender ratios present within each service. The average age of all the respondents was 40 years (21-69 years) and this was similar across all

three samples. Most of the respondents were married or were living with their partner (67%) and just over half had dependent children (55%). The average tenure was 6.5 years (6 months to 39 years). Volunteer/non-sworn respondents consisted of 17%. These results were all similar across the three services.

### Measures

**Work demands:** An adapted version of Hart, et al's., (1993) Police Daily Hassles Scale (PDHS) was utilised as a measure of frequently occurring minor work demands. This adaptation has been previously documented and is based on selecting the items with the highest factor loadings, on each of the scale dimensions (Brough, 2004). For the purposes of this research, the items were generalised to make them appropriate to the non-police emergency services (Brough & Mansell, 2001). The PDHS contains two subscales: organisational hassles (15 items) and operational work hassles (10 items). Example items include: *Excessive paperwork* and *Not receiving recognition for a job well done* (organisational hassles) and *Trying to show an interest in people* and *Hoax calls* (operational hassles). The respondents were asked to indicate the degree to which each item had made them feel hassled during the past month at work. Items were rated with a Likert-type scale (0 = *Definitely not a hassle* to 4 = *Definitely was a hassle*). High scores therefore indicate more hassles (demands). The internal scale reliability (Cronbach's alpha estimates) for each subscale was acceptable, ranging between .81-.84

(organisational hassles) and .72-.78 (operational hassles) across the three samples (see Table 1).

**Work-family conflict:** Work-family conflict was estimated with Warr's (1990) four-item measure of negative job carry-over. Example items include: *After I leave work I keep worrying about job problems* and *I find it difficult to unwind at the end of a work-day*. The respondents indicated their level of agreement with the items upon a Likert-type scale (1 = *Strongly disagree* to 5 = *Strongly agree*). High scores therefore indicate high levels of work-family conflict. Acceptable internal consistencies (Cronbach's alpha coefficients) of .74-.82 were produced by this research (Table 1).

**Neuroticism:** Neuroticism was measured by twelve items as defined by Eysenck, Eysenck, and Barrett's (1985) revised Neuroticism Scale. The respondents were asked to indicate the extent to which the twelve listed items generally applied to themselves. The respondents answered upon a Likert-type scale (1 = *Strongly agree* to 4 = *Strongly disagree*). High scores therefore indicate high levels of neuroticism. Acceptable reliability coefficients (Cronbach's alpha) of .86-.88 were produced by this research (Table 1).

**Job satisfaction:** Job satisfaction was measured with Warr, Cook, and Wall's (1979) fifteen-item Job Satisfaction Scale. The scale attempts to measure the degree of satisfaction with current intrinsic and extrinsic job components. Example items include: *Your chance for promotion* and *The amount of variety in*

Table 1. Item means, standard deviations and internal reliabilities of the continuous variables by Service

	Police			Fire			Ambulance		
	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$
Organisational hassles	2.10	9.54	.81	1.79	10.98	.84	1.65	10.29	.82
Operational hassles	2.19	6.96	.78	1.59	7.63	.76	1.62	6.85	.72
Work-family conflict	3.22	4.12	.80	3.20	4.29	.82	2.98	3.86	.74
Neuroticism	1.92	6.11	.88	1.95	3.09	.88	1.87	5.47	.86
Intrinsic job satisfaction	4.52	5.71	.76	4.24	7.18	.83	4.36	6.84	.81
Extrinsic job satisfaction	4.75	5.99	.67	4.59	7.65	.74	4.61	7.12	.72
Work well-being	4.11	6.85	.88	4.04	7.66	.91	4.31	6.75	.90

your job (intrinsic satisfaction) and *The physical working conditions* and *Your job security* (extrinsic satisfaction). The respondents answered on a Likert-type scale (1 = *Extremely dissatisfied* to 7 = *Extremely satisfied*). High scores therefore indicate high levels of satisfaction. Acceptable internal consistency (Cronbach's alpha coefficients) for the two subscales was produced by this research: .76-.83 (intrinsic) and .67-.74 (extrinsic) (Table 1).

**Work well-being:** Finally, work-related psychological well-being was measured with Warr's (1990) twelve item scale. The scale incorporates two subscales: anxiety-contentment and depression-enthusiasm, but was treated as a composite measure for the purposes of this paper. Scale items consist of a list of adjectives such as: *Tense*, *Relaxed* and *Anxious*. The respondents were asked to indicate to what extent the last few weeks in their job had led them to experience each item. The respondents answered on a Likert-type scale (1 = *Never* to 5 = *All of the time*). Reverse scoring of the negatively scored items ensured that high scores represented high levels of work well-being. Highly acceptable internal reliability statistics (Cronbach's alpha) for this measure were produced: .88-.91 (Table 1).

**Results**

The patterns of bivariate relationships between the research variables (H1) were assessed via individual correlation analyses conducted upon the data from each Service. The results of these three analyses were largely comparable with each other and are illustrated in Tables 2 and 3. The experiences of organisational hassles and operational hassles were associated with increased levels of work-family conflict for all the respondents. The two work hassles variables were also negatively associated with both job satisfaction and work well-being, with organisational hassles producing stronger associations with these variables across all groups, as compared to operational hassles. The results for the ambulance respondents (Table 3) suggest that their experiences

of operational hassles were not as strongly associated with either job satisfaction or work well-being, as compared to the results produced by the fire and police respondents. Tenure was negatively associated with work-family conflict for the firefighters only, and was positively associated with organisational hassles for the ambulance respondents. Finally, the two job satisfaction subscales produced strong positive associations with work-related psychological well-being across all three groups, as was expected.

*Differences between the three emergency services*

Differences in the mean scores of the continuous variables (H2), across the three sample groups were tested with the General Linear Model (GLM) procedure. The significant results of

these analyses are presented in Table 4. The overall GLM *F* was significant on all levels (Pillai's trace, Wilks' lambda, Hotelling's trace and Roy's largest root, all *p* < .001), suggesting progression with the univariate analysis. The results of the GLM are interpretable with reference to the means scores for each measure, depicted in Table 1.

Table 4 indicates that both operational and organisational hassles, work-family conflict, work well-being, and intrinsic job satisfaction produced significant differences in mean scores across the three services. The police respondents produced the highest mean scores for both organisational and operational work hassles variables (Table 1), as compared to both the fire and ambulance respondents. The ambulance respondents produced statistically lower average levels

Table 2. Intercorrelations (Police and Fire Service respondents)

	1	2	3	4	5	6	7	8
1. Tenure		-.03	-.01	-.18**	-.12	-.05	.01	-.03
2. Operational hassles	-.03		.57***	.42***	.26***	-.37***	-.19**	-.38***
3. Organisational hassles	.10	.67***		.29***	.21***	-.60***	-.58***	.40***
4. Work-family conflict	-.02	.39***	.41***		.50***	-.28***	-.19**	-.50***
5. Neuroticism	-.03	.16*	.24***	.40***		-.26***	-.26***	.46***
6. Job sat - intrinsic	-.10	-.30***	-.55***	-.26***	-.18**		.67***	.49***
7. Job sat - extrinsic	-.07	-.26***	-.41***	-.18**	-.21**	.67***		.42***
8. Work well-being	-.02	-.33***	-.42***	-.55***	-.50***	.38***	.41***	

N.B. All tests are two-tailed. \**p* < .05; \*\**p* < .01, \*\*\**p* < .001. Police associations depicted below the diagonal, Fire associations depicted above the diagonal.

Table 3. Intercorrelations (Ambulance Service respondents)

	1	2	3	4	5	6	7
1. Tenure							
2. Operational hassles	-.01						
3. Organisational hassles	.13*	.47***					
4. Work-family conflict	-.04	.38***	.40***				
5. Neuroticism	-.02	.14*	.26***	.45***			
6. Job sat - intrinsic	-.03	-.28***	-.60***	-.34***	-.21***		
7. Job sat - extrinsic	-.05	-.18**	-.59***	-.27***	-.25***	.73***	
8. Work well-being	-.03	-.14*	-.39***	-.49***	-.53***	.43***	.34***

N.B. All tests are two-tailed. \**p* < .05; \*\**p* < .01, \*\*\**p* < .001.

of work-family conflict and higher average levels of work well-being, as compared to either of the police or fire respondents. Finally, the univariate results indicated that the police respondents have the highest mean intrinsic job satisfaction scores and this is significant when compared to the fire service respondents. No significant differences were identified in the levels of extrinsic job satisfaction or neuroticism across these three services.

**Predicting work-related psychological well-being**

The ability of neuroticism and work-family conflict to predict work-related psychological well-being (H3) was tested with a hierarchical multiple regression analysis. The categorical variable indicating the membership of the three services was dummy coded into two independent variables (with police arbitrary chosen as the control group) and these were entered into the equations at the first step (Cohen, Cohen, West, & Aiken, 2003). The contribution of the work characteristics predictors (work-family conflict and the two work hassles variables) was tested by their simultaneous entry into the equation at the second step. In order to test the unique influence of neuroticism this was entered into the equation alone at step 3. Finally, both job satisfaction predictors were entered at the fourth and final step. The results of this analysis are depicted in Table 5.

The Service predictors at step 1 accounted for a small but significant proportion of variance, with the ambulance predictor being especially strong, in comparison with the police (control) category. Work family-conflict in combination with the hassles predictors, jointly accounted for a significant proportion of shared variance of the variance in work well-being ( $R^2\Delta = .29, p < .001$ ). The work-family conflict predictor produced noticeably strong negative results as a unique predictor of work well-being, although its influence decreased with the inclusion of subsequent predictors (final  $\beta = -.26, p < .001$ ). The organisational hassles predictor was also produced as a significant predictor at steps 2

and 3. However, the entry of job satisfaction at step 4 reduced the influence of organisational hassles to non-significance.

As expected, neuroticism was a strong negative predictor of work well-being (final  $\beta = -.30, p < .001$ ) and contributed a small but significant proportion of unique variance to the equation ( $R^2\Delta = .08, p < .001$ ). Finally, both intrinsic and extrinsic job satisfaction were significant positive predictors of work well-being, although their contribution was fairly weak. Overall the equation explained an adequate proportion of the variance in work well-being ( $R^2 = .45, F(8, 632) = 63.62, p < .001$ ).

**Discussion**

*Similarities and differences between the three services*

The correlational analyses produced a similar pattern of bivariate relationships between the research variables for each emergency service. These bivariate relationships were in the expected directions, confirming Hypothesis 1. It is apparent that high levels of both organisational and operational hassles are associated with high levels of work-family conflict and low levels of job satisfaction and psychological well-being. These results are not surprising and reflect the established relationships between work demands

Table 4. Significant GLM analyses of service by work hassles, work-family conflict, intrinsic job satisfaction and work well-being

Dependent variable	Type III sum of squares	Mean square	F	$\eta^2$
Operational hassles	5254.31	2627.15	51.72***	.13
Organisational hassles	5609.20	2804.60	26.42***	.07
Work-family conflict	260.16	130.08	8.35***	.01
Intrinsic job satisfaction	349.13	174.57	4.09**	.03
Work well-being	4.65	2.33	10.21***	.02

\*\*p < .01; \*\*\*p < .001.

Table 5. Summary of hierarchical regression analysis for the prediction of work well-being

Predictors	Step 1 $\beta$	Step 2 $\beta$	Step 3 $\beta$	Step 4 $\beta$	$R^2$	$R^2\Delta$
Step 1						
Ambulance	.20***	.06	.08*	.15***	.04***	.04***
Fire	.00	-.07	-.06	-.00		
Step 2						
Work-family conflict		-.42***	-.28***	-.26***	.33***	.29***
Operational hassles		.01	-.00	-.03		
Organisational hassles		-.25***	-.22***	-.06		
Step 3						
Neuroticism			-.32***	-.30***	.41***	.08***
Step 4						
Intrinsic job satisfaction				.14***	.45***	.04***
Extrinsic job satisfaction				.13**		

$\beta$  = standardised beta coefficients. \*p < .05; \*\*p < .01, \*\*\*p < .001. The Service predictors are dummy-coded.

and various psychological outcomes described by the occupational stress theories (O'Driscoll & Brough, 2003). The current research however is unique in demonstrating that the patterns of bivariate relationships occur largely to a similar extent across three emergency service populations.

The GLM analyses suggested that the three services produced similar scores on the experience of neuroticism and extrinsic job satisfaction only. The remaining standardised measures produced statistically significant differences across all or some of the three services. The analyses implied that the police respondents experienced on average more work hassles (both operational and organisational) as compared to the fire or ambulance service respondents. This finding contradicts hypothesis 2 and instead appears to support previous investigations of the uniqueness of police work (Beaton et al., 1998; Hart & Cotton, 2003; Pendleton, Stotland, Spiers, & Kirsch, 1989). The current research demonstrated that this uniqueness is present when simultaneously comparing common work hassles across three emergency services.

While the mean scores for the variables of work-family conflict, work-related psychological well-being and intrinsic job satisfaction were similar; the GLM analyses demonstrated that the ambulance service workers had statistically higher levels of work well-being and lower levels of work-family conflict as compared to the other respondents. The police workers on average experienced higher levels of work-family conflict when compared with both the ambulance and fire service personnel. An item analysis of the work-family conflict measure indicated that the police respondents were more likely to worry about job problems after leaving work and found it difficult to unwind after work, as compared to their fire and ambulance colleagues. This finding reflects the traditional view of police stress that suggested for example, that police-work has adverse impacts on various non-work criteria such as marital relationships, suicide rates and alcohol consumption (Burke, 1998; Loo, 1984; Nordlicht, 1979). Arguments against the common occurrence of such

extreme outcomes for police workers have also been raised (e.g., Bibbins, 1986; Terry, 1985).

The current research identifies that concerns with work problems does produce a high level of work-family conflict, especially within the police service workers. In accordance with the current interest in identifying the antecedents and consequences of work-family conflict for both employees and employers (e.g., Brough & Kelling, 2002; Brough & O'Driscoll, 2005), it is suggested that a fruitful area for subsequent research is a more detailed investigation of the levels of work-family conflict experienced by emergency service workers (especially police officers). The evaluations of outcomes such as levels of personal relationship satisfaction and child development (children of emergency service workers), as well as both individual and organisational constructs, are suggested as pertinent criterion measures.

#### *The prediction of work-related psychological well-being*

The respondent's designated service produced a small but significant result in the prediction of work well-being. Reflecting the GLM results, the multiple regression equation suggested that employment within the ambulance service directly predicted positive levels of well-being to a greater extent in comparison with the fire and police services. Previous comparative investigations have also implied that ambulance (paramedic) work is generally less stressful in comparison with the job demands of the other emergency services (e.g., Beaton et al., 1998; Miller, 1995). The replication of this result here is especially pertinent when considering the recent recognition of violent assaults perpetrated against operational ambulance officers and the documented adverse health consequences of these assaults (Corbett, Grange, & Thomas, 1998; Pozzi, 1998), including New Zealand ambulance officers (Brough, in press; Hsiung, Ismail, Macleod, Mahyudin, Mohamed, Nukada, & Simmons, 2001).

Both work-family conflict and neuroticism were strong negative predictors of psychological well-being,

supporting Hypothesis 3 and replicating the results of previous investigations (Brough & Kelling, 2002; Mansell & Brough, 2005). It is apparent that the interference of work demands within non-work domains has a detrimental influence on work-related psychological well-being. It is also apparent that levels of neuroticism directly influence psychological well-being. This finding supports the recent debates concerning both the direct and the indirect influence of neuroticism within the stress-strain process. In comparison to recent similar observations (Mansell & Brough, 2005; Spector et al., 2000), the current research demonstrated the importance of controlling for neuroticism in self-report estimations of psychological outcomes.

Finally, previous research has documented the benefits of examining job satisfaction as two distinct intrinsic and extrinsic components (Brough & Frame, 2004; Mullarkey, Wall, Warr, Clegg, & Stride, 1999). The current research however, demonstrated that intrinsic and extrinsic job satisfaction have similar but distinct relationships with the research variables (i.e., within the correlation and GLM analyses) and that both variables predict work well-being to a similar extent. These findings contribute to the discussions concerning both the division of the job satisfaction construct and whether job satisfaction is best assessed as predictor or criterion variable in organisational psychology research (Brough & Frame, 2004; Judge, Parker, Colbert, Heller, & Ilies, 2001).

This paper has succeeded in comparing the levels of work-related psychological well-being of fire, police and ambulance emergency service workers. The levels of psychological well-being differed across the three services, with the ambulance service respondents reporting the highest levels. The relationships between the psychological variables were largely similar across the three services, providing support for the influence of organisational hassles, work-home conflict, neuroticism and job satisfaction in the prediction of work-related psychological well-being. The results reported here have implications for comparative policy and intervention programs focused on maintaining the

psychological health of emergency service workers. For example, the characteristics of the ambulance service that contributed to the high psychological well-being of its employees are worthy of further investigation, with the aim of potentially applying such organisational characteristics to the fire and police services. The increased diversity and generally higher education level of ambulance officers in comparison with fire and police officers for example, have been acknowledged as two potentially relevant characteristics and are targeted areas for improvement by both the New Zealand Fire and Police Services (e.g., Brough & Smith, 2002).

This paper concludes with a comment from the completed questionnaire of one emergency service respondent, exemplifying the qualitative data reported elsewhere (Brough & Mansell, 2001). Although no qualitative data has been analysed in this paper, the comment is included as a highly pertinent statement reflecting the work experiences of emergency service workers. The statement provides support for the influence of frequently occurring minor work stressors (i.e., organisational hassles) in comparison with the influence of major critical incidents:

*"A lot of emphasis is made about the stress of the 'big jobs', but I have only had a couple of jobs upset me. More often it is the little things that annoy me, no lunch/dinner, late finishes when you have plans. The cumulative effect of those things are often worse than any job."* [Respondent 301].

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