

Benchmarking Occupational Stressors and Strain Levels for Rural Nurses and Other Health
Sector Workers

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Abstract

This study was conducted with 1097 employees (866 females, 217 males, 14 did not indicate gender) in a regional Health Service District (HSD) who completed the Queensland Public Agency Staff Survey (QPASS). Nurses' results on measures of organisational climate and psychological outcomes were compared with those of other employees in the HSD. Nurses reported less favourable outcomes on all but one of the organisational climate scales, and also were found to have more distress (strain), and lower levels of morale, job satisfaction, and quality of worklife than others. Results were generally less favourable for nurses working in the large regional hospital and in mental health than for nurses in other facilities.

Benchmarking Occupational Stressors and Strain Levels for Rural Nurses and Other Health Sector Workers

Access to medical care in rural and remote areas is significant for the viability of life in those communities. Even if budgetary decisions were taken today to ensure the ample provision of physical resources such as hospitals and clinics, the problem of providing qualified staff could not so easily be solved. Rural communities have long grappled with the problem of being unable to attract health professionals to live and work in their areas. For example, a report of a recent survey indicated that the shortage of doctors in rural Australia had now reached 700 (Dawson 2002), and there has been a longstanding concern with recruiting and retaining nurses outside the main urban centres (Hegney 1996). This paper will focus specifically on the experiences of nurses working in regional and rural settings within a Queensland Health Service District (HSD), identifying specific areas of concern by comparing nurses' measures on organisational climate and attitudes to worklife scales with those of other health sector employees in the same environments.

Background

Nursing is generally seen as a stressful occupation, with nurses being susceptible to physical and mental health problems, and even suicide (Baldwin 1999). The nature of the work can require them to be daily witness to, or participants in, life and death decisions (Hirschhorn and May 1999). Baldwin identified their main stressors as high workload, lack of staff support, contact with critically ill patients, emotional demands of patients and relatives, and increasingly, the risk of violence, particularly for nurses in psychiatric settings and male nurses (who are more frequently called on to deal with violent situations). A UK study of National Health Service nurses (Muncer et al. 2001) noted similar causes of stress for nurses in that country, many of them relating to the need to perform multiple roles and working with insufficient staff and resources. It is not surprising then, that nurses are in short supply. Neill and Taylor (2002) cited the aging of the nursing workforce, diminished recruitment, expanded

employment opportunities for women, and changes to the provision and funding of health services as indicators of an ongoing lack of nurses to meet current and emerging needs.

It has been suggested that the impact of nursing shortages has always been more devastating in rural and remote communities, which experience chronic vacancies and high staff turnover (Neill and Taylor 2002). While efforts are being made to recruit more nurses into regional and remote areas, it is also important to ensure that they stay. Hegney et al. (2002) cited a study conducted by Queensland Health which indicated that 18 of the 21 health service districts in the state which recorded higher than average turnover rates were in rural and remote areas. However, in a survey of remotely-based registered nurses conducted by Huntley (1994-1995), she discovered that 84% of respondents had worked at one hospital for five years or more, leading her to conclude that once nurses are recruited to these areas, many of them do tend to stay. A number of studies (e.g., Huntley, Neill and Taylor, Hegney et al.) have investigated factors which are likely to impact on nurses' decisions to leave their positions. These studies found that withdrawal intentions were generally related to poor attitudes of doctors and administration, emotional and physical demands of the job, family responsibilities, lack of understanding of their professional needs, inadequate backup, staff shortages, and lack of access to professional education. A study of nurses who had resigned from nursing positions in Queensland Health facilities between January 1999 and May 2000 (Hegney et al. 2001) found that those nurses who had worked in the most remote areas of the state nominated issues related to isolation. However, for others, the most important influences on their decisions to leave were work-related rather than issues such as community size, the local economy, and so on.

Research Aims, Methodology, and Hypotheses

Despite the many studies reporting high strain levels for nurses, there are remarkably few studies comparing nurses with other health occupations. This kind of benchmark information is vital if researchers hope to influence those responsible for resource allocation

and planning at national and state levels. In order to make such benchmark comparisons, some key methodological considerations must be observed. In the first place, it is important to recognise that strain is a reaction to a complex network of interacting environmental and individual factors. The environmental factors may be work-related or home-related and their effects may be moderated or mediated by a range of personal and psychosocial factors, such as coping skills, social support, and the like. If we restrict the focus of the study to the work environment – which is the subject of most of the claims in the literature regarding the nursing profession – there are well-validated organisational climate instruments that are designed to measure many of the positive and negative influences found in all work situations. The generic nature of such instruments addresses the first methodological consideration in this benchmarking study, which is to use measures that enable comparisons across professions, industries, and occupational groupings. Although this approach overlooks operational factors that may be confined to particular occupations, such as dealing with trauma, there is evidence in the stress literature that generic organisational factors are more important than local operational factors when predicting stress responses. Hart and Cotton (2002), for example, showed that levels of personal distress for Australian police officers are more affected by organisational climate than by events that occur during the conduct of their daily duties. In other words, despite the popular conception that it is the nature of police work *per se* that leads to distress, low morale, and withdrawal behaviour among police officers, the reality is that broad organisational climate factors such as appraisal and recognition systems, management practices, role clarity, goal congruence, and so on, are the major determinants of these responses.

A second methodological consideration follows from the work of Hart and Cooper (2001) who emphasised the need to take a much broader approach to occupational stress so that well-being is also considered. They argued that experiences of strain do not necessarily preclude overall states of happiness and well-being. We have observed this in our own work

on occupational stress (Fogarty et al. 1999) and support the view that a more balanced perspective is gained when both positive and negative features of organisational climate and individual reactions are surveyed. A lopsided view of professions can be gained if surveys focus exclusively on the negative aspects of the work environment.

Keeping these two considerations in mind, the present study will adopt an organisational climate approach to this benchmarking exercise. The survey instrument will be one that has been used across many different government agencies and one that captures not only a reasonably comprehensive set of both positive and negative organisational factors but also well-being and strain outcomes. The benchmarking aims can then be achieved by comparing the levels of organisational climate and work attitudes as reported by nurses against those reported by other workers in the health care system, and also by comparing the reactions of nurses working in different types of health facilities.

It was expected that smaller hospitals and workgroups would offer more opportunities for staff interaction and support, and would be likely to have lower workloads than in the larger hospital. This was suggested to some extent by Coward et al. (1995) who found that nurses in small rural hospitals reported higher job satisfaction than those in larger hospitals. Differences were also expected for the staff in mental health facilities, based on previous research suggesting greater strain associated with violence for this group (Baldwin 1999).

It was hypothesised that:

1. Scores on OC variables and outcome measures would be generally less favourable for nurses than for other employees in the HSD.
2. Nurses in the large hospital and nurses in the mental health service would report less favourable work environments than other nurses.

Method

Participants

Participants in this study were employees in a Queensland regional Health Service District (HSD). Facilities in the district included one large hospital, three smaller hospitals, three nursing homes, a community health service, other allied health services, and the district corporate office. The major hospital is located in a coastal regional centre and it is not considered geographically remote from services, having an Access/Remoteness index (DOHAC 1999) of 1 (highly accessible). The towns in which the smaller hospitals are located are rated 2 (accessible). Nevertheless, this region is some distance from the capital city, and so does experience some difficulties in terms of remoteness from the broader range of services available in the main urban centre. The data were collected as part of an organisational climate survey conducted with all employees of the HSD in 2002. A good response rate of 65% was achieved, with 1097 of the 1683 employees submitting completed survey forms.

The sample consisted of 866 (78.9%) females, and 217 (19.8%) males. Fourteen respondents did not indicate their gender. The largest age group (36.1%) was the 41-50 years cohort. The average time people had been in their current position and at their current location was 3-5 years. Approximately 20% of staff had been in their current positions for 10 years or longer.

Table 1 contains a summary of respondents' occupational categories.

Numbers in each Occupational Stream

Occupational category	Classification/Role	Number	Sub-Totals
Administrative	AO1-AO4	150	
	AO5-AO8	24	174
Medical	Jnr MO	17	
	Snr MO	26	

	Visiting MO	7	50
Professional	PO	69	
	Dental	60	129
Eng/Tech/Operational	Engineering Services	9	
	OSO	164	
	TO	7	180
Nursing	RN1	183	
	RN2	108	
	RN3	50	
	EN	91	
	AIN	76	508
Other/Did not indicate		56	56
Total			1097

Note. AO = Administrative Officer, MO = Medical Officer, OSO =Operational Services Officer, PO = Professional Officer, TO = Technical Officer, RN = Registered Nurse, EN = Enrolled Nurse, AIN = Assistant in Nursing.

Materials

The Queensland Public Agency Staff Survey (QPASS; (Hart et al. 1996) was used to obtain measures of employees' reactions to their work environment. QPASS has been used extensively with Queensland government departments and HSDs for a number of years. The original QPASS measured six aspects of a person's experiences at work – positive work events, negative work events, organisational climate, problem-focused coping, emotion-focused coping, and psychological outcomes. Only two of these aspects were measured on this occasion – organisational climate and psychological outcomes.

There are 10 scales measuring organisational climate variables. These are:

1. Workplace Morale (5 items): The enthusiasm, pride and energy of staff.

2. Supportive Leadership (5 items): The extent to which leaders are approachable, supportive and communicative.
3. Participative Decision-Making (4 items): The extent to which staff are encouraged and have opportunities to participate in decision-making.
4. Role Clarity (4 items): Whether roles and expectations are clearly defined.
5. Professional Interaction (7 items): The degree of acceptance and support from fellow staff.
6. Appraisal and Recognition (6 items): The quality of regular recognition and feedback.
7. Professional Growth (5 items): Encouragement of and opportunities for training and career development.
8. Goal Congruence (5 items): The extent to which personal goals are in agreement with workplace goals.
9. Workplace Distress (5 items): The level of frustration, stress, and tension in the workplace.
10. Excessive Work Demands (4 items): The level of constant pressure due to heavy workload.

The first eight of these scales measure positive aspects of the work environment, while the last two are negative indicators. Respondents indicate their agreement with each item on a 5-point scale.

The three subscales measuring psychological outcomes are:

1. Quality of Worklife (6 items): The extent to which a person's worklife meets their hopes and expectations.
2. Individual Morale (7 items): Levels of positive feelings experienced at work.
3. Individual Distress (7 items): Levels of negative feelings experienced at work.

The items on these three measures are marked on a 7-point scale.

Two additional outcome measures were obtained. In the final section of the questionnaire, participants were also asked to indicate their level of job satisfaction (3 items), and their intention to leave their current position (3 items).

Procedure

The survey was administered in a paper-based format to all staff. Work time was made available for its completion, and data were collected at various work sites over a two-week period in late 2002. Confidentiality was respected during all aspects of data collection, with management having access to group results only.

Results

The data were screened and prepared for analysis using SPSS for Windows. All scores were converted to percentages to enable appropriate comparisons to be made. Mean percentage scores and reliability data for each of the scales are presented in Table 2. The alpha coefficients indicate that the scales are reliable indicators of the organisational climate (OC) and psychological outcome variables they purport to measure.

Descriptive data for the QPASS subscales and additional measures (N = 1097)

Variable	<i>M</i> *	<i>SD</i>	α
Quality of Worklife	51.69	24.76	.92
Individual Morale	55.59	22.08	.93
Individual Distress	32.66	22.76	.90
Workplace Morale	52.61	21.55	.86
Supportive Leadership	58.59	24.22	.88
Participative Decision-Making	51.68	22.41	.83
Role Clarity	63.88	18.47	.80

Professional Interaction	62.81	18.35	.87
Appraisal & Recognition	50.20	22.98	.91
Professional Growth	51.71	21.75	.83
Goal Congruence	57.96	18.74	.81
Workplace Distress	58.10	22.51	.89
Excessive Work Demands	61.15	23.64	.83
Job Satisfaction	67.34	23.06	.81
Intention to Leave	18.54	21.10	.77

Note. * Scores expressed as percentages.

In order to compare the outcomes for nurses with other workers in the HSD, the sample was classified into four occupational groupings – Administrative, Medical/Professional, Operational/Technical/others, and Nursing. Analyses of Variance (AVOVA) were conducted for each of the outcome variables, followed by planned linear comparisons between nursing and all other occupational categories. Table 3 contains the mean scores and a summary of differences on the Psychological outcomes and OC scales for each of the four occupational groups. *F* scores and significance details are provided from the ANOVAs and *t* scores are reported for the linear comparisons between nurses and the average of the other three groups.

Table 3.

Summary of Mean Differences between Outcome Measures of Nurses and other Employees.

Variable	Mean				<i>F</i>	<i>t</i>
	Admin <i>n</i> = 174	Med/Prf <i>n</i> = 179	Op/Tech <i>n</i> = 216	Nursing <i>n</i> = 508		
Quality of Worklife	56.09	55.76	55.69	47.34	10.5**	5.6**
Individual Morale	57.45	59.20	60.97	51.15	13.0**	6.0**

Individual Distress	27.55	28.80	28.06	37.56	15.7**	-6.8**
Workplace Morale	57.61	55.80	54.47	48.68	10.7**	5.5**
Supportive Leadership	60.96	64.04	64.38	53.24	16.3**	6.7**
Participative Decn-Mkg	52.93	56.75	53.43	48.58	6.9**	4.2**
Role Clarity	66.04	63.89	68.06	61.38	7.6**	4.1**
Prof Interaction	64.56	64.99	63.31	61.29	2.5	
Appraisal & Recognitn	54.72	49.93	52.58	47.33	5.6*	3.6**
Professional Growth	52.34	56.22	52.56	49.53	4.3*	3.1**
Goal Congruency	60.32	59.86	59.71	55.74	4.4*	3.6**
Workplace Distress	27.55	28.80	28.06	37.56	25.6**	-8.7**
Excessive Work Dmnds	57.35	55.96	54.97	66.91	19.9**	-7.6**
Job Satisfaction	69.99	69.60	73.42	63.16	12.2**	5.6**
Intention to Leave	21.39	16.29	15.02	19.80	4.3*	-1.7

Note. * $p < .05$, ** $p < .001$

Admin = Management and Clerical staff, Med/Prf = Medical and Professional staff, Op/Tech = Operational, Technical, Engineering and other staff.

The t -scores are based on linear comparisons of nurses with all other occupational groups.

The ANOVAs revealed that there were significant differences ($p < .05$) among the mean scores on all outcome variables, except for Professional Interaction. The planned linear comparisons of other variables showed that for all but one of these measures nurses reported less favourable outcomes than the average of all other occupational groups. They recorded lower scores on all positive measures, such as Quality of Worklife ($t_{df=1044} = 5.6, p < .05$) and Individual Morale ($t_{df=1018} = 6.0, p < .05$), and higher scores on the negative indicators, Individual Distress ($t_{df=1046} = -6.8, p < .05$), Workplace Distress ($t_{df=1044} = -8.7, p < .05$), and Excessive Work Demands ($t_{df=998} = -7.6, p < .05$). The only variable for which nurses' scores

were not significantly different from others' was Intention to Leave ($t_{df=1058} = -1.7, p > .05$). Levene's test of homogeneity was used to determine the appropriate t value, based on the equality or non-equality of the variances in the linear comparisons. Tukey's test was applied post hoc to examine differences in Intention to Leave, revealing that nurses' relatively high score on this variable was in fact significantly higher than that reported by the operational and technical staff ($p < .05$), but not others. The group reporting the highest intention to leave was management and clerical, who also recorded a significantly higher score than operational/technical staff ($p < .05$) but not others.

Further analyses were conducted to investigate differences for nurses in different work environments. For these analyses, locations were defined as large hospital, small hospital, nursing home, mental health facility, community, and other. ANOVAs on each of the outcome variables were again conducted to determine between group differences. Two planned linear comparisons were made. The first was between nurses in large hospitals compared with the average of nurses in all other workplaces, and the second was between those in mental health services and the average of those in all other places. The results of these analyses are presented in Table 4.

Summary of Mean Differences among Outcome Measures of Nurses in Different Work Environments.

Variable	Mean for each workplace						<i>F</i>	<i>t^a</i>	<i>t^b</i>
	1	2	3	4	5	6			
Quality of Worklife	42.18	51.41	54.28	39.42	63.67	63.89	8.4**	-4.1**	-3.5**
Individual Morale	48.59	52.52	55.97	42.80	59.33	72.38	5.3**	-4.4**	-4.1**
Individual Distress	40.70	32.82	33.98	46.86	24.57	15.71	6.4**	5.4**	4.3**
Workplace Morale	45.62	51.20	53.93	39.29	59.62	65.00	6.6**	-3.2*	-4.1**
Supportive Leadership	50.64	60.00	56.18	40.00	65.96	78.00	6.9**	-3.1*	-5.0**
Participative Decision-Making	44.11	54.20	55.75	38.69	55.53	68.75	8.5**	-3.3*	-3.5*
Role Clarity	58.49	65.28	66.80	54.27	62.98	72.50	5.3**	-2.5*	-3.1*
Prof Interaction	58.46	63.53	64.55	61.15	65.38	73.57	3.1*	-3.3*	-1.2
Appraisal & Recognition	42.18	52.32	55.34	40.18	53.99	75.83	9.3**	-4.8**	-3.8**
Professional Growth	44.86	53.58	56.01	46.67	55.77	67.00	6.4**	-4.1*	-2.0

Variable	Mean for each workplace						<i>F</i>	<i>t^a</i>	<i>t^b</i>
	1	2	3	4	5	6			
Goal Congruency	52.37	54.07	63.68	47.81	63.96	66.00	9.4**	-3.0*	-3.6**
Workplace Distress	68.72	59.18	58.55	75.71	44.23	45.00	14.1**	4.9**	5.5**
Excessive Work Demands	73.08	63.66	62.65	62.20	47.00	47.50	10.1**	5.9**	0.8
Job Satisfaction	58.60	67.36	69.69	56.98	71.58	85.56	6.5**	-5.5**	-3.3*
Intention to Leave	20.51	17.58	15.00	34.30	18.27	11.67	5.5**	0.5	4.0**

Note. * $p < .05$, ** $p < .001$.

1 = large hospital ($n = 399$), 2 = small hospital ($n = 100$), 3 = nursing home ($n = 197$), 4 = mental health ($n = 85$), 5 = community ($n = 76$), 6 = other services ($n = 114$).

t^a = *t-score* based on linear comparison of nurses in large hospitals with nurses in all other workplaces.

t^b = *t-score* based on linear comparison of nurses in mental health services with nurses in all other workplaces.

Again significant differences ($p < .05$) were revealed for nurses in different work environments on all variables. As hypothesised, the linear comparisons showed that nurses in the large hospital reported significantly poorer outcomes than those working in other facilities. All positive measures were lower and all negative measures were higher, except their expressed intentions to leave, which were not significantly different from a linear combination of all others ($t_{df=55} = 0.5, p > .05$). However, a post hoc analysis using Tukey's test indicated that nurses in the large hospital did have higher intentions to leave ($p < .05$) than nurses working in small hospitals (who recorded the lowest score on this variable) and those working in nursing homes. The main concerns of nurses in the large hospital were related to excessive work demands ($t_{df=485} = 5.9, p < .001$) and lack of timely appraisal and recognition of their work ($t_{df=485} = -4.8, p < .001$). Nurses working in the mental health service also reported significantly poorer results than others. However, their pattern of concerns was different. Their issues were not related to higher work demands than others ($t_{df=485} = 0.8, p > .05$), but rather to high levels of workplace distress ($t_{df=489} = 5.5, p < .001$) and lack of supportive leadership ($t_{df=492} = -5.0, p < .001$). They also reported the highest levels of intention to leave ($t_{df=51.9} = 4.0, p < .001$).

Discussion and Conclusions

Hypothesis one was strongly supported, with nurses demonstrating less favourable outcomes than other HSD employees on all organisational climate scales except professional interaction – a measure of the degree of acceptance and support they experience in the workplace. Inspection of the means revealed that nurses recorded the lowest score on this variable also, but in this case the difference was not statistically significant at the .05 level. They also scored less favourably on all but one of the psychological outcome and attitude scores, having the lowest levels of job satisfaction and morale, and the highest levels of distress. The only exception was for the withdrawal behaviour, intention to leave. It is interesting to note that the highest scorers on this scale were the administrative group, even

though they have recorded moderately high levels of job satisfaction and low distress. This accorded with previous research indicating that intention to leave and turnover were strongly influenced by the availability of suitable options (Hulin 1991). The administrative group's intentions to leave may be influenced by the fact that they are the most likely to be able to find alternative employment in other industries in the local area, their skills being least specific to the health field. Nurses on the other hand, are unlikely to find other employment opportunities without leaving the area, a move that might be difficult due to family and/or financial circumstances. Nevertheless, the score for nurses on Intention to Leave is relatively high and is significantly higher than the withdrawal intentions of operational/technical staff. This latter group have the lowest intention to leave, which is aligned as expected, with their expressions of high levels of morale and job satisfaction.

The data also provided support for the second hypothesis, that nurses in large hospitals and in mental health services would report less favourable outcomes than nurses in other facilities. All positive measures were scored lower, and negative indicators were higher for nurses in large hospitals, except for Intention to Leave, again giving evidence of a complex set of predictors implicated in the decision process associated with job withdrawal. Nurses in mental health recorded generally poorer outcomes than others on all scales except those related to workload, professional interaction, and professional growth. Further muddying the waters with regard to the formation of intentions to leave, these nurses scored the highest level on this variable. It may be that this score reflects the availability of the less disruptive and more feasible option of a transfer into another part of the health service, rather than the intention to leave their position altogether.

Nurses in the large hospital reported very high levels of Excessive Work Demands, a finding consistent with previous research (Baldwin 1999, Muncer et al. 2001). They also recorded low scores on the Appraisal and Recognition scale, indicating that they did not feel they were given adequate feedback on the quality of their work, nor were their efforts

appreciated. Hegney (1996) identified this as an issue, particularly in areas where there were shortages of medical practitioners and nurses. In these situations, nurses were often called upon to perform in extended roles, but despite this, they were often not adequately trained nor appropriately recognised or remunerated for the additional work they were required to perform (Hegney). Even though they had increases in responsibilities, nurses were still treated as “handmaidens” (AAP 2002). Anderson and Kimber (1991) noted that nurses in rural areas need independence and knowledge in a wide range of areas, sometimes being called on to practise in other allied health fields as well as within all medical practice areas.

The unfavourable outcomes recorded by nurses in the mental health service appeared to be more related to their high levels of workplace distress and lack of supportive leadership, than to workload issues. Their scores indicated that they do not see their supervisors as generally approachable and supportive, or aware of the problems they face. Their distress is reflected in high scores on Intention to Leave, and seems to support previous findings that the nature of the work with psychiatric patients may be more confronting and distressing than other nursing roles (Baldwin 1999). It seems likely that in cases where staff feel anxious and distressed, they may expect and hope for even higher levels of support from their superiors. Their higher expectations and needs might influence their perceptions of the level of support provided, causing them to rate it lower in relative terms than it might actually be. Further studies will need to be conducted to see if other mental health workers report similarly high work-related distress and low job satisfaction.

A limitation of this study is that these results represent the responses of employees in one Queensland Health Service District, and may not therefore be generalisable to other environments. The study will need to be replicated, particularly in relation to those working in mental health. Nevertheless, the results are sufficiently robust to suggest that nurses’ experiences at work are in fact less positive than the experiences of those employed in other roles in the same workplaces.

The shortage of nurses is no doubt a contributing factor to the high workload faced by those trying to meet the needs of their patients. The high workload in turn appears to be contributing to making the nursing role less desirable, and is associated with formations of intentions to leave, further exacerbating the shortage. The negative outcomes for nurses described in this study call for continued action to be taken in order to help alleviate this vicious and self-defeating cycle. Hegney et al. (2002) list a variety of strategies and interventions being introduced to recruit and retain nurses, particularly in rural areas. Some of these include rural nursing scholarships, and mentoring and transition support for staff taking up new positions. Recently achieved pay increases for nurses may also boost recruitment by making the profession a more attractive option. Future studies may be able to measure the effectiveness of these strategies.

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