Organizational climate and occupational stressors as predictors of withdrawal behaviours and injuries in nurses

Monica A. Hemingway* and Carlla S. Smith

Bowling Green State University, New Jersey, USA

Withdrawal behaviours (defined here as turnover and absenteeism) and work-related injuries are a significant problem in the nursing profession and are commonly attributed to the stressful nature of the job. This study examines an occupation-specific model of the stress process in nurses in which specific organizational climate dimensions were hypothesized to affect withdrawal behaviours and injuries both directly and indirectly through the mediating effects of specific occupational stressors. Regression analyses on the responses of 252 nurses revealed direct climate–stressor and stressor–outcome relationships to exist, as well as an indirect climate–outcome relationship. The findings suggest that researchers/practitioners should concentrate on developing interventions designed to affect specific stressors and their antecedents rather than focusing on generic stress reduction interventions and global measures.

The nursing profession faces a significant problem with turnover (e.g. Cherniss, 1980), absenteeism and work-related injuries (Stobbe, Plummer, Jensen & Attfield, 1988). This problem is commonly attributed to the stressful nature of the job, with the US National Institute for Occupational Safety placing nursing in the top 40 occupations with the highest prevalence of stress-related disorders (Heim, 1991). A host of environmental factors, such as unsafe or injury-prone workplaces (McClain, 1995) and poorly-designed job tasks (Dipboye, Smith & Howell, 1994), contribute to the development of job-related stress which, in turn, is associated with numerous undesirable outcomes. Occupational stress is at least partially responsible for much of the health claims, absenteeism and turnover in the workplace (Byers, 1987) and has also been established as a precipitating factor in injury occurrence at work (Grimaldi & Simonds, 1989; Murphy, DuBois & Hurrell, 1986).

Studies of occupational stress in nurses have uncovered a number of common stressors in this population. Heavy workload and the death of patients are the two major sources of stress for all nurses (Hipwell, Tyler & Wilson, 1989; Tyler, Carroll & Cunningham, 1991). Research has also indicated that both role conflict and role ambiguity are inherent in the nursing role (Gray-Toft & Anderson, 1981a). Role

*Requests for reprints should be addressed to Monica A. Hemingway, The Chauncey Group International, 664 Rosedale Road, Princeton, New Jersey 08540, USA.
conflict and ambiguity frequently arise from opposing demands by the medical and administrative staff and from conflict between instrumental and expressive role functions (i.e. goal-oriented or ‘healing the patient’ vs. nurturant or ‘creating a therapeutic environment’). The death of patients also threatens role perceptions by confronting the nurse with an unacceptable view of him- or herself as a failure (i.e. failing in the job of healing the patient).

Attempts to reduce the incidence of absences, turnover and injuries in nurses have often been motivated by the assumption that work-related stress is the major antecedent of such behaviours. Within this paradigm, efforts to reduce these outcomes have typically focused on the employee (e.g. stress management programmes and employee assistance programmes). Unfortunately, these methods have met with only limited success (Murphy, 1988). Therefore, in an attempt to better understand the stress process in working populations, researchers have also focused on the antecedents of occupational stress, such as organizational climate. ‘Organizational climate’ has been widely defined as the shared perceptions of employees about a given work environment, as its ‘personality’, or as the ‘feel’ of the workplace (Field & Abelson, 1982). Climate may foster or deter certain outcomes and can be manipulated to facilitate organizational goals.

Recent studies suggest a relationship between organizational climate and perceived occupational stressors in the nursing profession (Basson, 1988; Bennett, 1989; Newton & Keenan, 1987). In particular, the climate dimensions of work pressure, autonomy, peer cohesion and supervisor support have consistently been found to be related to perceived stressors in nurses such that high levels of autonomy, peer cohesion and supervisor support and low levels of work pressure are associated with lower perceived stress.

A number of researchers have attempted to place organizational climate, stressors and strains in a framework or model that could help to explain the stress process in nurses. These proposed models are each strikingly similar, with organizational climate typically seen as an antecedent of both stressors and strains. For example, Gray-Toft & Anderson (1981a) suggested that the amount of role conflict and ambiguity experienced by nurses might be a result of the organizational characteristics (including organizational climate) of the unit in which they work and that these characteristics might also account for differences in perceived stress among units.

The researchers proposed a model in which role ambiguity and role conflict were seen as intervening variables that mediated the effects of organizational climate on job stress, job satisfaction and absenteeism. This model was later supported and expanded by Leigh, Lucas & Woodman (1988), who examined role ambiguity and role conflict, psychological climate (organizational climate at the individual level), and job attitudes (satisfaction and turnover intentions). They found that psychological climate was directly tied to role conflict, role ambiguity and attitudes, and that the role stressors mediated the organizational climate–job attitude relationship. Perceptions of the organization's psychological climate accounted for substantial portions of the variance in role stress and job attitudes. Further work with nurses by Revicki & May (1989) also found that perceptions of organizational climate affected role ambiguity, job satisfaction and perceived job-related stress.
Organizational climate was related to outcomes (depression and job satisfaction) both directly and indirectly through the mediating effects of role ambiguity and perceived occupational stress.

The present study

The current study proposed an organizing framework of possible relationships among organizational climate, occupational stress, and stress-related outcomes (see Fig. 1). This exploratory framework was very similar to the model originally proposed by Gray-Toft & Anderson (1981a) and was based on Revicki & May's (1989) model of the occupational stress process in nurses. However, Revicki & May's model was expanded to include four specific climate dimensions (work pressure, autonomy, supervisor support and peer cohesion), four specific stressors (role conflict and role ambiguity, work overload, and the death and dying of patients), and behavioural outcomes (injuries, absenteeism and turnover intentions). The framework included both a direct relationship between climate and behavioural outcomes and an indirect relationship mediated by stressors. Because behavioural outcomes were included here for the first time, the framework proposed in this study was considered to be exploratory. Multiple regression was used to test only predictive relationships among the constructs; no causal relationships were proposed or tested. However, based on the results of this study, future research using structural equation modelling (e.g. confirmatory path analysis) may be appropriate.

The current framework departs from previous work in three ways. First, while the model is similar to those examined in earlier studies (e.g. Leigh et al., 1988; Revicki & May, 1989) in that stressors are seen as a mediator of the climate–strain relationship, the present framework included behavioural outcomes (i.e. turnover intentions, absences and injuries) as stress-related outcomes. Numerous studies have demonstrated the relationship between stressors and turnover intentions (e.g. Lang, Wittig-Berman & Rizkalla, 1992; O'Driscoll & Beehr, 1994) and between stressors and absenteeism (e.g. Jacobson, Aldana, Goetzel & Vardell, 1996; Hendrix, Steel, Leap & Summers, 1991). However, previous studies involving
organizational climate as a predictor of stress and strain have focused primarily on attitudinal, psychological and physiological outcomes, with little attention given to behavioural outcomes, such as work-related injuries, absenteeism and turnover. Absenteeism and turnover, along with occupational injuries/accidents, are behaviours that can result in employees not being present at work. As such, they can be seen as a group of undesirable outcomes that have immediate financial consequences for organizations (e.g. costs for replacement workers, injury compensation payments, separation pay, etc.) and can possibly worsen the working conditions of fellow employees (e.g. increased workload, loss of peers).

Second, the framework presented here is occupation-specific. Research on role stressors has generally relied on generic models of the inter-relationships among the antecedents and consequences of role stressors that ignore organizational and occupational differences (Bacharach & Bamberger, 1992). However, Barley (1990) suggested that occupation-specific role stressor models might be more appropriate because structural and cultural differences across occupations make cross-occupational generalization of role stressor models questionable. Bacharach & Bamberger (1992) later demonstrated that occupation-specific role stressor models have a greater degree of model fit and specificity and are therefore more plausible. The research presented here is specific to the nursing profession only. While the climate dimensions and stressors included here are common in the nursing profession, they may not be relevant to other occupations. In addition, while the general relationships between constructs should apply across occupations, relationships among specific climate dimensions and stressors may vary based on occupational and situational differences.

Third, the current study used only specific climate dimensions and specific stressors commonly found in the nursing profession, rather than the global or composite measures typically used. Neither climate nor stress are unidimensional constructs. An examination of specific climate dimensions and stressors may, therefore, prove to be more informative and may result in a more meaningful and useful model of the antecedents and consequences of occupational stress. In addition, this study sought to expand on previous models by including stressors other than role stressors that are specific to nurses, namely workload and the death and dying of patients.

Three hypotheses were proposed:

Hypothesis 1. Favourable climate dimensions (i.e. a high degree of supervisor support, autonomy and peer cohesion, and a low degree of work pressure) predict lower levels of occupational stressors and fewer undesirable behavioural outcomes.

Hypothesis 2. A positive predictive relationship exists between occupational stressors and the behavioural outcomes examined here, such that an increase in occupational stressors is associated with an increased incidence of undesirable behavioural outcomes.

Hypothesis 3. The predictive relationship between organizational climate and behavioural outcomes remains significant after the variance accounted for by
the stress measures is partialed out (i.e. a direct climate–outcome relationship exists).

**Method**

**Participants**

The sample consisted of 252 full-time registered nurses (RNs) sampled from different wards and shifts within each of four hospitals located in a small city in Ontario, Canada. Ages ranged from 26 to 64 years, with a mean age of 42. Most of the nurses in this sample were female (98%), married (71%), and had completed their basic diploma in nursing (81%). Job tenure ranged from 1 to 38 years, with 25% having spent over 20 years in their present position.

**Measures**

*Organizational climate.* The Work Pressure, Autonomy, Supervisor Support and Peer Cohesion subscales of the Work Environment Scale (WES; Moos & Insel, 1974) were used to assess organizational climate. The Work Pressure subscale assesses the degree to which the pressure of work and time urgency dominate the job milieu. The Autonomy subscale measures the extent to which employees are encouraged to be self-sufficient and to make their own decisions. The Supervisor Support subscale assesses the extent to which management is supportive of employees and encourages them to be supportive of one another. The Peer Cohesion subscale taps the extent to which employees are friendly and supportive of one another. Each subscale consists of 10 true/false statements about the workplace that are intended to apply to all work environments.

The WES has previously demonstrated satisfactory internal consistency, with coefficient alpha ranging from .68 to .80 for the four subscales included in this study (Moos, 1981). However, reliability estimates in the current study were lower than those typically reported in the literature, ranging from .52 to .73. Attempts to eliminate items with low item–total correlations, or items that were perhaps of limited relevance to the current sample, did not result in improved scale reliabilities. Given that the WES is a standardized measure developed for use in the general population, it was decided not to make any modifications to the instrument in order to retain the integrity of the scale.

*Job-related stressors.* The stressors role conflict and role ambiguity were assessed using the 5-point scales developed by Rizzo, House & Lirtzman (1970). The 8-item role conflict scale measures the degree to which respondents perceive incongruity between multiple job demands and/or expectations. The 6-item role ambiguity scale assesses perceived clarity regarding job responsibilities. Both scales have previously shown acceptable internal consistency. Jackson & Schuler’s (1985) meta-analysis of role conflict and role ambiguity showed an average reliability coefficient of .89 for both scales. However, in the present study the role conflict scale had a low level of internal consistency, with a coefficient alpha of only .50. The role ambiguity scale showed adequate reliability (α = .78).

The stressors workload and death and dying of patients were assessed using the Nursing Stress Scale (NSS; Gray-Toft & Anderson, 1981b). Each of the subscales measures how often nursing situations are perceived as stressful on a 4-point scale (0 = never to 3 = very frequently). The 6-item Workload subscale reflects the physical work environment and includes stressful situations arising from workload, staffing and scheduling problems, and insufficient time to complete all required tasks. The 7-item Death and Dying subscale is a measure of the psychological environment at work and includes stressful situations resulting from the suffering and death of patients. Both subscales have previously shown adequate test–retest reliability (.83 and .74, respectively) and internal consistency (α = .77 for both scales; Gray-Toft & Anderson, 1981b). Internal reliability estimates in the present study were consistent with this earlier work, with α = .79 for the Workload subscale and .81 for the Death and Dying subscale.

*Reported injuries.* All injuries were classified according to the 10 categories used by the Ontario Worker’s Compensation Board for the nursing occupation (see the Appendix). The survey asked...
nurses how many times in the last 6 months they had experienced each of these injuries and had reported it to their supervisor or to a medical officer.

**Unreported injuries.** Not all injuries are reported. For this reason, unreported injuries were measured to obtain a more accurate assessment of organizational injury rates. Unreported injuries were assessed using a 5-point scale (1 = never to 5 = very frequently) indicating how frequently nurses had experienced each of the listed injuries but had not reported it. These injuries were the same as those included under reported injuries.

**Near injuries.** Actual injuries are relatively rare events, making it difficult to establish a base rate. This problem can be alleviated to some extent by assessing near injury rates in addition to reported and unreported injuries (Chapais, 1959). The questionnaire examined near injuries by asking respondents to indicate on a 5-point scale (1 = never to 5 = very frequently) how frequently they had been in a situation in which they 'almost' sustained one of the listed injuries over the past 6 months.

**Injury composite.** The four most common injuries, accounting for the majority of nursing injuries (between 67% and 79%) in this study, were contusions, scratches, sprains/strains and cuts/punctures. This was consistent with earlier research by Smith, Colligan, Frockt & Tasto (1979), who found these same four injuries accounted for the majority of nursing injuries in their study. None of the other six injury types accounted for more than 7% of injuries. Because the majority of injuries were accounted for by the four injury types mentioned above, these four injury types were combined to form composite measures for reported, unreported and near injuries. Each of the three composites consisted of the total frequency of contusions, scratches, sprains/strains and cuts/punctures experienced by the respondent in that category of injuries (e.g. Reported Composite = total number of contusions, scratches, sprains/strains and cuts/punctures that were reported). These composites were used for all analyses using injury data (i.e. the terms 'reported injury', 'unreported injury' and 'near injury' are used throughout this study to refer to the composite injury measures).

**Absence.** The present study examined the frequency of short-term absences, defined here as absences of 2 days or less. Short-term absences are more likely to be valid indicators of voluntary absence (Chadwick-Jones, Nicholson & Brown, 1982). Participants indicated days on which they had been absent by placing an 'X' on the appropriate days on a calendar that covered the last 6 months, thereby facilitating calculation of the frequency of absences and allowing each absence incidence to be categorized as either short term (2 days or less) or longer term (more than 2 days).

An examination of the absence measure revealed it to be highly positively skewed owing to the large number of nurses having no absences over the 6-month period covered by the study. The absence measure was subsequently normalized by a square root transformation and all statistics were calculated from the square root of the absence measure.

**Turnover intentions.** Three items taken from the Michigan Organizational Assessment Questionnaire (Seashore, Lawler, Mirvis & Cammann, 1982) were used to assess participants' intent-to-turnover. The 7-point scale (1 = not at all likely to turnover to 7 = extremely likely to turnover) measures thoughts of quitting the current job and the self-reported likelihood of actively searching for a new job in the next year. Other research has shown this measure to have satisfactory internal reliability estimates (e.g. \( \alpha = .83 \); Seashore et al., 1982). Internal consistency in the present study was adequate (.68), although somewhat lower than that found in previous work.

**Data analyses**

The hypotheses concerning direct relationships between constructs were tested by simultaneously regressing stressors on each organizational climate dimension. Similarly, behavioural outcomes were regressed on organizational climate measures, as well as on occupational stressor measures. The proposed mediating effect of occupational stressors on the organizational climate–behavioural outcome relationship was examined using hierarchical multiple regression.

**Results**

Table 1 presents the means, standard deviations and correlations among all variables. All relationships between the four climate dimensions and the four
<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Peer cohesion</td>
<td>1.62</td>
<td>(.69)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. Supervisor support</td>
<td>.34*</td>
<td>(.69)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>3. Autonomy</td>
<td>.41*</td>
<td>.46**</td>
<td></td>
<td>.52**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Work pressure</td>
<td>-.21**</td>
<td>-.46**</td>
<td>-.31**</td>
<td>(.73)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Death and dying</td>
<td>-.24**</td>
<td>-.23**</td>
<td>-.24**</td>
<td>.18*</td>
<td>(.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Workload</td>
<td>-.11</td>
<td>-.37**</td>
<td>-.23**</td>
<td>.48**</td>
<td>.36**</td>
<td>(.79)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Role conflict</td>
<td>-.19*</td>
<td>-.15*</td>
<td>-.12</td>
<td>.30**</td>
<td>.21**</td>
<td>.34**</td>
<td></td>
<td>(.50)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Role ambiguity</td>
<td>-.23**</td>
<td>-.34**</td>
<td>-.36**</td>
<td>.33**</td>
<td>.26**</td>
<td>.38**</td>
<td></td>
<td>.24*</td>
<td>(.78)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Turnover intentions</td>
<td>-.18*</td>
<td>-.23**</td>
<td>-.12</td>
<td>.30**</td>
<td>.22**</td>
<td>.23**</td>
<td></td>
<td>.27**</td>
<td>.19**</td>
<td>(.68)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Short-term absence</td>
<td>.00</td>
<td>-.10</td>
<td>.02</td>
<td>.05</td>
<td>-.03</td>
<td>.00</td>
<td></td>
<td>-.06</td>
<td>-.04</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Reported injuries*</td>
<td>-.14*</td>
<td>-.09</td>
<td>-.13*</td>
<td>.09</td>
<td>.11</td>
<td>.12*</td>
<td></td>
<td>.07</td>
<td>.23**</td>
<td>.17*</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Unreported injuries*</td>
<td>-.10</td>
<td>-.17*</td>
<td>-.10</td>
<td>.16*</td>
<td>.20*</td>
<td>.19*</td>
<td></td>
<td>.22**</td>
<td>.16*</td>
<td>.18*</td>
<td>.25**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Near injuries*</td>
<td>-.19*</td>
<td>-.15*</td>
<td>-.18*</td>
<td>.21**</td>
<td>.15*</td>
<td>.14*</td>
<td></td>
<td>.12</td>
<td>.12</td>
<td>.07</td>
<td>.16*</td>
<td>.22**</td>
<td>.64**</td>
</tr>
<tr>
<td>Mean</td>
<td>5.35</td>
<td>2.88</td>
<td>5.31</td>
<td>6.66</td>
<td>9.31</td>
<td>10.41</td>
<td></td>
<td>26.08</td>
<td>11.84</td>
<td>7.22</td>
<td>.62</td>
<td>.21</td>
<td>5.99</td>
</tr>
<tr>
<td>SD</td>
<td>1.96</td>
<td>2.16</td>
<td>1.83</td>
<td>2.14</td>
<td>4.27</td>
<td>3.48</td>
<td></td>
<td>4.76</td>
<td>3.90</td>
<td>3.86</td>
<td>.55</td>
<td>.47</td>
<td>2.45</td>
</tr>
</tbody>
</table>

*Note. Internal consistency reliabilities on diagonal are Cronbach’s alphas.

*All injury data were calculated using the injury composite measures.

*p ≤ .05; **p ≤ .001.
stressors are in the expected direction, with positive climate factors related to lower scores on the stress measures. As expected, turnover intentions and the three injury measures were significantly related to both organizational climate and occupational stressors. However, contrary to expectations, neither the climate dimensions nor stressors were significantly related to the frequency of short-term absences.

Multiple regression analyses provided mixed support for the hypothesis that the four organizational climate dimensions would predict stressors (see Table 2). Poor peer cohesion predicted stress owing to the death and dying of patients. High work pressure was predictive of greater role conflict and role ambiguity, and of more stress from heavy workload. Poor supervisor support was significantly related to greater stress from heavy workload, and lack of autonomy was related to higher role ambiguity.

Further regression analyses tested the hypothesis that the four organizational climate dimensions examined in this study would predict occupational injuries, short-term absenteeism and turnover intentions in nurses (see Table 3). Contrary to expectations, only turnover intentions were predicted by any of the climate dimensions. While the variance accounted for by the four climate dimensions in predicting near-injuries was significant ($R^2 = .08, p \leq .05$), none of the individual regression coefficients reached significance.

Only short-term absences were not predicted by any of the stressors (see Table 3). Increased stress from the death and dying of patients was reflected in higher rates of unreported and near injuries, while reported injuries were predicted by the amount of role ambiguity perceived by nurses. Higher role conflict was associated with increased turnover intentions.

The hierarchical regression analysis examining the hypothesized predictive relationship between organizational climate and behavioural outcomes after controlling for occupational stressors demonstrated this relationship to be non-significant. Table 4 shows that while occupational stressors accounted for significant variance in all outcomes except short-term absences, none of the
Table 3. Regressions of organizational climate dimensions and occupational stressors on behavioural outcomes

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Behavioural outcomes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reported injuries $^a$</td>
<td>$\beta$</td>
<td>Unreported injuries $^a$</td>
<td>$\beta$</td>
<td>Near injuries $^a$</td>
</tr>
<tr>
<td>Organizational climate dimensions</td>
<td>Peer cohesion</td>
<td>-.02</td>
<td>-.03</td>
<td>-.23</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Autonomy</td>
<td>-.03</td>
<td>-.01</td>
<td>-.11</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>Supervisor support</td>
<td>.01</td>
<td>-.12</td>
<td>-.11</td>
<td>-.05</td>
</tr>
<tr>
<td></td>
<td>Work pressure</td>
<td>.02</td>
<td>.10</td>
<td>.24</td>
<td>.01</td>
</tr>
<tr>
<td>Total $R^2$</td>
<td></td>
<td>.04</td>
<td>.03</td>
<td>.08*</td>
<td>.02</td>
</tr>
<tr>
<td>Occupational stressors</td>
<td>Death and dying</td>
<td>.00</td>
<td>.09*</td>
<td>.14*</td>
<td>-.01</td>
</tr>
<tr>
<td></td>
<td>Workload</td>
<td>.01</td>
<td>.04</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Role conflict</td>
<td>.00</td>
<td>.07</td>
<td>.01</td>
<td>-.01</td>
</tr>
<tr>
<td></td>
<td>Role ambiguity</td>
<td>.02*</td>
<td>.05</td>
<td>.06</td>
<td>-.01</td>
</tr>
<tr>
<td>Total $R^2$</td>
<td></td>
<td>.06*</td>
<td>.09*</td>
<td>.06*</td>
<td>.01</td>
</tr>
</tbody>
</table>

$^a$All injury data were calculated using the composite injury measure.

$p \leq .05$.

organizational climate dimensions accounted for significant variance in any of the outcomes. Thus, Hypothesis 3 regarding the existence of a direct climate–outcome relationship was not supported.

Discussion

The empirical analyses presented here provide mixed support for the proposed model of occupational stress in nurses. While other studies examining organizational climate as an antecedent of occupational stressors have found support for similar models, this study is the first to examine withdrawal behaviours and injuries as outcomes. In addition, while previous research has found significant relationships between organizational climate and stress, these prior relationships were between climate dimensions and an overall stress score (e.g. Hipwell et al., 1989) or between global climate measures and specific stressors (e.g. Revicki & May, 1989). In contrast, the current study examined the relationships between specific climate dimensions and specific stressors.

Turnover intentions were predicted by only one occupational stressor: nurses expressed higher turnover intentions when they experienced increased role conflict. This is consistent with the research of Gray-Toft & Anderson (1981a), who showed that overall stress was a significant factor in turnover rates among nurses. However, while measures of overall stress are comprised of a number of different types of stressors (e.g. heavy workload, death of patients), only role
Table 4. Hierarchical regressions showing the contribution of organizational climate dimensions to behavioural outcomes after partialling out occupational stressors

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Reported injuries $^a$</th>
<th>Unreported injuries $^a$</th>
<th>Near injuries $^a$</th>
<th>Short-term absences</th>
<th>Turnover intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$\beta$</td>
<td>$\beta$</td>
<td>$\beta$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Step 1. Occupational stressors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death and dying</td>
<td>.03</td>
<td>.16$^*$</td>
<td>.17$^*$</td>
<td>-.03</td>
<td>.13</td>
</tr>
<tr>
<td>Workload</td>
<td>.08</td>
<td>.06</td>
<td>.08</td>
<td>.05</td>
<td>.09</td>
</tr>
<tr>
<td>Role conflict</td>
<td>-.01</td>
<td>.15$^*$</td>
<td>.04</td>
<td>-.07</td>
<td>.20$^*$</td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>.20$^*$</td>
<td>.08</td>
<td>.06</td>
<td>-.04</td>
<td>.07</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.06$^*$</td>
<td>.10$^*$</td>
<td>.07$^*$</td>
<td>.01</td>
<td>.12$^*$</td>
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<td>Step 2. Organizational climate dimensions</td>
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<td>.01</td>
<td>-.10</td>
<td>.00</td>
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</tr>
<tr>
<td>Autonomy</td>
<td>-.06</td>
<td>.03</td>
<td>-.01</td>
<td>.08</td>
<td>.08</td>
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<td>Supervisor support</td>
<td>.08</td>
<td>-.06</td>
<td>-.01</td>
<td>-.13</td>
<td>-.07</td>
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<td>.02</td>
<td>.00</td>
<td>.10</td>
<td>.03</td>
<td>.13</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>.01</td>
<td>.00</td>
<td>.03</td>
<td>.02</td>
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<tr>
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<td>.59</td>
<td>.26</td>
<td>1.81</td>
<td>.92</td>
<td>2.20</td>
</tr>
<tr>
<td>(df)</td>
<td>(4,249)</td>
<td>(4,249)</td>
<td>(4,249)</td>
<td>(4,249)</td>
<td>(4,249)</td>
</tr>
</tbody>
</table>

$^a$All injury data were calculated using the injury composite measures.

$^p \leq .05$. 

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conflict predicted turnover intentions in the present sample of nurses. This finding suggests that the relationship between overall stress and turnover found both in previous research and the current study may be due mostly to high levels of role conflict experienced by nurses, rather than to overall perceptions of stress.

The frequency of short-term absences was not predicted by any of the organizational climate dimensions or by any of the stressors. The finding that short-term absences and turnover intentions were not related in this study \( r = .05, \) n.s.) was also unexpected. This relationship is typically quite strong (e.g. a meta-analysis by Mitra, Jenkins & Gupta (1992) found a corrected average correlation of .33 between absences and turnover) and suggests that there may have been a problem with the absence measure used in this study. Although the absence data were normalized prior to analysis, restriction in range was still a significant problem, as the vast majority of nurses reported no absences during the six months covered by this study \( (M = .62 \) days absent, \( SD = .55) . \) The lack of variance in absence scores may have resulted in the observed non-significant relationships between absences and the various predictors. Alternatively, nurses may simply have been unable to accurately recall the number of absences or the precise dates on which absences occurred, which could affect whether an absence was classified as short- or long-term. However, this occurrence is rather unlikely considering the importance placed by both management and staff on having few, or preferably no, absences.

It is also possible that short-term absences in nurses are not directly related to stressors or organizational climate. Jackson & Schuler's (1985) meta-analysis of role stress research indicated that the relationship between self-reported role stressors and behavioural outcomes, such as absenteeism, is typically low. Although several research studies with nurses have found relationships between climate factors, such as work pressure and absence frequency (e.g. Landeweerd & Boumans, 1994), the majority of studies have not examined absenteeism as an outcome, and of those that did, most failed to find a direct relationship between climate or stressors and absence behaviours.

Different injury categories were predicted by different occupational stressors. Increased stress owing to the death and dying of patients resulted in more near-miss and unreported injuries. These types of incidents are usually not serious and do not result in physical harm to the employee. However, they are indicative of situations that might have resulted in more serious, reportable injuries. The need to cope with terminally ill patients and their families can place a heavy emotional burden on nurses. Nurses who encounter high frequencies of stressful experiences are more likely to be dissatisfied, depressed and physically unwell (Reviski & May, 1989; Tyler & Cusoway, 1992; Tyler et al., 1991). Under those conditions it is not unreasonable to expect that they might focus less on the job they are performing, placing themselves at greater risk for injury.

Nurses who experienced more role ambiguity were more likely to incur a reportable injury at work. Owing to a lack of clarity regarding job responsibilities, nurses may be performing roles for which they are not properly trained or qualified, thereby placing themselves in unfamiliar situations where the potential for injury is greater.
Implications of the present study

When occupational stressors were paralled out of the climate–outcome relationship, the resulting relationships were not significant. This suggests that the organizational climate–behavioural outcome relationship was mediated by a third variable or class of variables, namely occupational stressors. These findings imply that withdrawal behaviours and injuries may be reduced by decreasing the incidence of specific stressors but are not directly reduced by creating a more favourable organizational climate.

One weakness of many stressor reduction programmes is the lack of consideration given to the causes or antecedents of these stressors. If the antecedent is not removed or diminished, addressing the stressor alone often proves to be ineffective in reducing stress-related outcomes. However, by focusing interventions on the antecedents of specific stressors, stress-related outcomes might be reduced.

In the present study, each stressor was predicted by only one or two dimensions of organizational climate. For example, only peer cohesion was significantly related to stress owing to the death and dying of patients. Similarly, only the work pressure climate dimension was significantly related to the amount of role ambiguity experienced. Workload was predicted by the supervisor support and work pressure climate dimensions. Role ambiguity was associated with autonomy and work pressure. This implies that stressors may be diminished by manipulating organizational climate, but that one must carefully select those aspects of organizational climate that are clearly predictive of a specific stressor.

These findings have important implications for intervention programmes designed to reduce stressors (and thereby reduce withdrawal behaviours and injuries) in the workplace. Using global climate measures does not allow one to specify the particular climate dimension(s) that predict stressors, only that a relationship between overall climate and stressors may exist. Stressor-reduction programmes would, therefore, be limited to reducing stressors through attempts to change the organizational climate as a whole. These global climate changes, if they are even possible, may not create changes (or large enough changes) in the specific dimensions that are actually predictive of stressors. This ‘catch-all’ approach attempts to change all climate dimensions in the hope that the one, or few, dimensions that are actually driving the climate–stressor relationship will be affected. The intervention might, therefore, have little, or unpredictable, effects on employees’ stress perceptions.

In contrast, by determining the specific climate dimensions that are predictive of specific stressors, interventions can target only those climate dimensions known to predict the stressors under consideration. Interventions designed in this way would be more manageable, less expensive, and less time-consuming than interventions that are less narrowly focused, and such interventions would also be more likely to succeed. It may be most practical to focus on those aspects of organizational climate that predict the greatest number of stressors. For example, the present results suggest that reducing perceived work pressure might be an effective method of decreasing the amount of role conflict, role ambiguity and workload experienced by nurses.
Limitations and concerns of the present study

A significant limitation of the current study was that several scales had low scale reliabilities. Measurement error in the independent variable produces a conservative bias, making it more difficult to find significant relationships. It is possible that some relationships that may actually have been present were not statistically detectable owing to the unreliability of the predictors in this study.

Except for the Nursing Stress Scale, all reliabilities were lower than those typically reported, particularly for the role conflict scale. One possible explanation may be that the sample used in the current study (i.e. Canadian nurses) somehow differs from the general population in how they interpret and answer these items. Future researchers working with Canadian nurses may need to examine whether the items should be better defined or reworded so that they are culturally relevant, readily understood and easily interpreted by these nurses.

Alternatively, the items may not be directly relevant to the nursing profession and/or to the hospital environment. This explanation is somewhat supported by the fact that the only scale with reliabilities similar to those typically found was the NSS, a scale developed specifically for use with nurses in a hospital environment, whereas the other scales are meant to apply to a wide variety of respondents. It is also worth noting that some of the items on the Work Environment Scale (e.g. ‘employees generally feel free to ask for a raise’) were simply not applicable to nurses working in Ontario hospitals (nurses’ wages at that time were frozen by the provincial government).

Finally, the exclusive use of anonymous self-report data presents possible common method variance problems. Some method bias was perhaps partially alleviated by the use of reverse-scored items, different response scales and the use of multiple injury measures. Given that primarily perceptions were assessed in this study (i.e. climate, perceived stressors), more ‘objective’ measures (e.g. observational, physiological, other-reports) were simply not appropriate. Unfortunately, archival or other reports were not available to assess withdrawal behaviours. Future research using longitudinal designs or behavioural assessments of outcomes is needed to replicate the findings of this study.

Conclusions

Many interventions are generically focused, designed to reduce strains by decreasing perceived stress. However, the current results indicated that not all stressors predicted behavioural strains. Therefore, attempts to reduce perceived stress could result in interventions that may have little or no relationship to specific undesirable outcomes. Other interventions may target the antecedents of occupational climate, as a means of reducing stress-related outcomes. However, only certain organizational climate dimensions were actually predictive of stressors. It therefore makes little sense to target interventions at organizational climate in general. Consequently, researchers/practitioners should concentrate on developing interventions designed to affect specific stressors and...
specific antecedents of these stressors. These interventions would be more likely to succeed, thereby saving time and effort and avoiding needless distress on the part of workers.

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References

Withdrawal and injuries in nurses


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Appendix. Ontario Workers’ Compensation Board claimable injuries for nurses

1. Burns or scalds (heat)
2. Contusions, crushing bruises
3. Scratches, abrasions (superficial wounds)
4. Sprains, strains
5. Concussions
6. Cuts, lacerations, punctures (open wounds)
7. Fractures
8. Hernia, ruptures
9. Tendinitis
10. Contagious or infectious diseases