Psychosocial Factors Contributing to Occupational Injuries Among Direct Care Workers

by Tracy L. Zontek, PhD, CIH, CSP, Jody C. Isernhagen, EdD, and Burton R. Ogle, PhD, CIH, CSP

Direct care workers have the highest injury rate in the United States, primarily due to work-related musculoskeletal disorders. This study examined the effect of psychosocial factors (i.e., stress, job satisfaction, organizational climate, safety climate, and training) on direct care workers’ injuries. On the basis of divergent work characteristics of direct care workers in facilities versus private homes, injury rates were found to be significantly different between workplaces ($\chi^2 = 4.179$, df = 1, $p = .041$). Tenure (77% of injuries occurred after 1 year of tenure) was significantly correlated with training, satisfaction, organizational climate, and stress. Because of the chronic nature of musculoskeletal disorders, tenure was used to choose cases for injury prediction using logistic regression. When tenure was greater than 1 year, job satisfaction [Exp(B) = 0.048, $p = .028$] was a predictor of injury and when tenure was greater than 3 years, both job satisfaction [Exp(B) = 0.002, $p = .033$] and training [Exp(B) = 31.821, $p = .044$] were predictors of injury. Psychosocial factors and home- versus facility-based workplaces should be considered to improve injury rates and retention among direct care workers.

The role of direct care workers in health care is fundamental; they provide basic patient care, assist with activities of daily living, and provide emotional support to patients. Eighty to 90% of care in a nursing home is provided by direct care workers (Zinn, 1993). In 2007, nursing aides, orderlies, and attendants had the highest rate of injuries and illnesses (465 per 10,000) and 7 times the national musculoskeletal disorder rate for all occupations (Bureau of Labor Statistics, 2008). It is likely these statistics underreport actual cases (de Castro, 2003). The U.S. Department of Labor evaluates nursing aide, orderly, and attendant injuries as one category, although, in practice, organizational factors and support structures vary substantially between residential and institutional settings. For example, a home health aide often cares for patients alone, whereas a direct care worker in a nursing home has direct supervision and assistance with care. One purpose of this study was to determine if injury rates differed among workers based on job title and work setting.

In addition to evaluating differences in injury rate, psychosocial and organizational factors were also considered. Traditional safety approaches (i.e., removing or isolating the hazard from the worker) have not been effective for direct care workers. Even if additional direct care workers are recruited and retained, the high injury rate of this group will prevent meaningful gains, as many will be out of work due to injury or working with chronic pain.
workers because the greatest risk of injury is found in the very nature of their job, the patient. Cox and Cox (1993) argued that traditional occupational health risk assessment does not look past hazard-harm relationships to other stressful characteristics of work. Direct care workers receive training to protect themselves from hazardous situations; however, other factors are inherent in their working conditions that may affect their risk for injury.

These factors are best considered using Karasek’s (1979) demand-control-support (DCS) model as the theoretical basis for the stress-injury relationship. The DCS model divides occupations into quadrants based on psychological demands (low or high) and decision latitude or control (low or high); the interplay of factors can lead to motivation and learning or negative health outcomes. Nursing aides were noted as one occupational group at high psychosocial health risk (e.g., cardiovascular disease, decreased performance, depression, and injury) because they had high psychological workload, low decision latitude, and little control. They were unable to channel their stress response into an effective coping mechanism (Karasek & Theorell, 1990). When social support was included in the model, nursing aides fell in the “isolated prisoner” quadrant, identified by low decision latitude and low social support. Direct care workers have fewer opportunities to make independent decisions, be creative, or control their work (Morgan, Semchuk, Stewart, & D’Arcy, 2002).

The premise of Karasek’s DCS model has been used in several health care studies measuring various outcomes. Gray-Toft and Anderson (1981) created a Nursing Stress Scale to identify factors that caused stress for nurses and nursing aides; job satisfaction was correlated with stress. Major sources of stress were workload, dying patients, and inadequate preparation to meet the emotional needs of patients and their families. Workload was identified in several nursing studies as a prominent source of stress (Hipwell & Tyler, 1989). Dewe (1987) investigated coping mechanisms and found stress was influenced by the tools nurses have to cope, extending Karasek’s DCS model such that jobs with high psychological strain and high decision latitude provide opportunities to be creative in work organization and coping. Livingston and Livingston (1984) determined more psychological symptoms were found among younger, less experienced nurses with less tenure who spent more time with patients. Norbeck (1985), in a study of registered nurses, found stress correlates negatively with satisfaction and positively with psychological symptoms. Abramson (1989), using the Nursing Stress Scale, found job satisfaction was the best predictor of physical, psychological, and social stress environments for nursing aides. Bru, Mykletun, and Svebak (1996) demonstrated that psychosocial and organizational work factors were associated with musculoskeletal back pain. To determine the usefulness of the DCS model for nurses, Seago and Faucett (1997) used scales to measure job content, psychological demand, and decision latitude, concluding that nursing assistants should not be grouped with nurses as they have fewer opportunities to determine how their work is performed.

Additional studies also reported nursing assistants had the least amount of decision latitude and the highest levels of job strain (Morgan et al., 2002; Sullivan, Kerr, & Ibrahim, 1999). Hemingway and Smith (1999) found role ambiguity predicted reported injuries and a lack of social support predicted stress from death and dying, which in turn predicted higher unreported and near-miss injuries. In terms of Karasek’s DCS model, lack of social support was associated with higher unreported and near-miss accidents. Violante et al. (2004) identified a significant relationship between stress-related psychosomatic symptoms (depression, coping strategies, work environment, and job satisfaction) and acute and chronic back pain among nurses, nursing aides, and head nurses.

The unique roles and responsibilities of direct care workers, with high psychological stress and low decision latitude, make them particularly vulnerable to adverse health effects. Based on the DCS model and literature review, several factors emerged as potentially significant in understanding direct care workers’ injuries: training, organizational climate, safety climate, stress, and job satisfaction.

The first step in the prevention of injuries is training; this construct must be considered when evaluating injury causation. All direct care workers employed in a facility funded by Medicaid or Medicare are required to complete 75 hours of training, including proper lifting and patient transfer techniques (U.S. Department of Labor, 2004). Gershon et al. (1995) found that knowledge of universal precautions alone did not translate into compliance. Training was identified as a need for direct care workers because these workers were not prepared for the physical, emotional, and constant demands of the work (Kopiec, 2000).

Organizational climate is “the way things are done around here,” how the work is organized and potentially why direct care worker training may not be adequate preparation for job demands. Previously, safety interventions focused on the individual with few interventions addressing group or organizational issues (Hoffman & Stetzer, 1996). The strongest individual-level predictor of worker injury is performance pressure or role overload, an organizational factor (Hoffman & Stetzer; Zohar, 2000). Shannon, Mayr, and Haines (1997) identified significant relationships between organizational factors and employee injuries. Carroll (1998) noted an organization’s self-assessment capability and management’s openness to feedback are critical elements for injury prevention. A new “no-lift” policy at a hospital was not effective, despite training and equipment purchases, until employees were threatened with dismissal for noncompliance (Marcia Caserio, personal communication, April 6, 2005). Employees’ willingness to report in-
cidents may indicate management’s attentiveness to safety issues and subsequent commitment to reduce future occurrences (Mears, Whittaker, & Flin, 2001). As noted in the DCS model and subsequent studies, direct care workers have little decision latitude or control of organizational factors.

An organization’s safety climate is determined by management’s commitment to safety when that commitment adversely affects production. Consistent management commitment is an indication of a strong safety climate (Flin, Mears, O’Connor, & Bryden, 2000). Zohar (2003) noted that measuring safety climate was essential to determine if written safety policies were actually practiced and enforced. Carroll (1998) concluded managers wanted a safe environment but did not always act appropriately or understand the resources needed (i.e., low morale dismissed as a component of safety). In a health care setting, safety climate was found to be a predictor of job hindrance (e.g., compliance with universal precautions) (DeJoy, Murphy, & Gershon, 1995). Additional analysis of these data by Anderson, McGovern, Kochevar, Vesley, and Gershon (2000) found that safety climate affects workers’ compliance with safety regulations. A weak safety climate, where production is valued over worker illness or injury, can set the stage for stress and injury.

Perception is important when measuring stress as workplace factors may be perceived as leading to stress or job satisfaction, depending on individual characteristics and abilities (Adams & Bond, 2000; Norbeck, 1985). Nursing aides often feel they are in a no-win situation; no matter what action an aide chooses, it is wrong, a continuously stressful situation (Kopiec, 2000). In health care settings, the following factors were found to cause stress: criticism, uncooperative patient care, conflict with other personnel, inadequate preparation, and excessive workload (Gray-Toft & Anderson, 1981). Job stress has been associated with depression and other psychological symptoms (Norbeck). Psychosocial work demands were associated with back pain (Bru et al., 1996). Finally, in a study of nurses by Hemingway and Smith (1999), role ambiguity and stress due to poor peer cohesion and patient death and dying predicted unreported injuries and near-misses.

Job satisfaction has been defined as the degree of positive affective orientation toward one’s job (Blegen & Mueller, 1987). Job satisfaction is related to both the nature of the job and the individual’s expectations of the job (Lu, While, & Barriball, 2005). In a literature review, Lu et al. found common sources of dissatisfaction in nursing: working conditions; interactions and relationships with patients, coworkers, and managers; the work itself; self-growth and promotion potential; praise and recognition; control and responsibility; leadership style. The effects of dissatisfaction were absenteeism, burnout, turnover, and intention to quit. Reported studies suggest a direct link between job dissatisfaction and injuries; however, satisfaction has been shown to be inversely associated with occupational stress and linked to adverse health outcomes (Gray-Toft & Anderson, 1981; Norbeck, 1985; Packard & Motowidlo, 1987).

The purpose of this study was to determine if the injury rate differed between occupational titles and identify significant psychosocial and organizational factors that predict direct care workers’ injuries.

**METHODODOLOGY**

A survey instrument was developed to measure factors that could affect direct care workers’ injury rates. All work was approved by the Institutional Review Board for the Protection of Human Subjects of the University of Nebraska-Lincoln.

The dependent variables, injury and near-miss, were measured by asking respondents the following: whether they were injured or almost injured (near-miss) in the past 4 weeks; how many times did an injury or near-miss occur; whether the injury or near-miss was reported; and the type of injury. Injury and near-miss results were dependent on accurate recall and reporting. To strike a balance between sample size and recall bias for the dependent variables (injury and near-miss), a 4-week period was chosen as the reporting time frame. Several dependent variables (type and number of injuries) were used to reduce mono-method bias and demonstrate convergent validity (Seo, Torabi, Blair, & Ellis, 2004). Mono-method bias refers to asking participants if they were injured, how many times, and then what the actual injury was. If these measures were inconsistent (i.e., reported never injured but indicated an injury as a back sprain), then that response would not be used. By using multiple questions (avoiding mono-method bias), the answers should lead to the same result (convergent validity) such that the researchers are receiving what they requested.

The covariates, demographics (i.e., gender and age) and employment characteristics (i.e., job title, type of facility, hours worked per week, and tenure at current job), were included.

The independent variables, training, organizational climate, safety climate, stress, and job satisfaction, were chosen to consider psychosocial and organizational factors as predictors of injury. With the exception of training, the scale used for each independent variable was derived from the literature. Respondents’ answers from each scale were averaged and used for further statistical analysis.

The following items in the instrument related to training: feedback from supervisor or other personnel on work tasks and safe behavior, new employee orientation, and in-service and continuing education programs. Cronbach’s alpha, a measure of scale reliability, was 0.703; however, this scale contained only four items.

Organizational climate items, specifically aspects of institutional policy, were taken from the Cooper Stress Check (Cooper, 1981). The Cooper Stress Check rates organizational factors (communication, management issues, job responsibilities, conflict, office politics, pay, and promotion) using a 6-point Likert
scale (no stress at all to a great deal of stress). Bru et al. (1996) used this scale in a study of work-related stress and musculoskeletal pain among female hospital staff and found age was significantly correlated with institutional policy ($r = -0.18, p < .01$): older workers experienced less stress from institutional policies than younger workers. In this study, the reliability of this scale was measured with a Cronbach’s alpha of 0.917.

An instrument developed by Anderson et al. (2000) determined associations between safety climate and compliance with standard precautions. This 7-item instrument (hazards minimized, safety is a priority, everyone works together for safety, unsafe work practices corrected by supervisor, unsafe work practices corrected by coworkers, employer has a safety committee, and freedom to report safety violations) uses a 4-point Likert scale. A Cronbach’s alpha of 0.85 determined internal reliability and a principal components analysis showed a single factor highly correlated with all items, demonstrating a one-dimensional construct. In this study, Cronbach’s alpha was slightly higher (0.88).

The Nursing Stress Scale is a self-administered survey for which nurses (i.e., registered nurses, licensed practical nurses, and nursing assistants) are asked to indicate the frequency, rather than the intensity, of stressful situations (Gray-Toft & Anderson, 1981). A factor analysis resulted in three stress dimensions (physical, psychological, and social) and seven independent scales (workload [physical], death and dying, inadequate preparation to handle the emotional needs of patients and their families, lack of staff support, uncertainty concerning treatment [psychological], and conflict with physicians and conflict with other nurses and supervisors [social]). Reliability was determined two ways: test-retest ($n = 31$, coefficient = 0.81) and internal consistency measures (Spearman-Brown coefficient = 0.79). The time between test and retest was 2 weeks. Given this short interval, a high correlation would be expected because stressful conditions in the organization are unlikely to change that quickly. The conflict with physicians and uncertainty concerning treatment scales were not used in this study. Direct care workers typically report to a registered nurse and have limited direct interaction with physicians. For this reason, as well as to control the length of the survey, this scale was not used. In this study, the reliability of the overall Nursing Stress Scale, measured with Cronbach’s alpha (0.937), as well as those

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographics and Organizational Factors</th>
</tr>
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<tr>
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<tr>
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<tr>
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<td>14 to 19</td>
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<td>20 to 24</td>
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<td>19</td>
</tr>
<tr>
<td>&gt; 65</td>
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<tr>
<td>Orderly</td>
<td>0</td>
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<tr>
<td>Attendant</td>
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<td>Home health care aide</td>
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<td>Other</td>
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<td><strong>Type of facility</strong></td>
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<tr>
<td><strong>Number of hours worked per week</strong></td>
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<tr>
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<td>34</td>
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<tr>
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<td>2</td>
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<tr>
<td>3 to 6 months</td>
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<td>25</td>
</tr>
<tr>
<td>&gt; 3 years</td>
<td>57</td>
</tr>
</tbody>
</table>
of the individual scales exceeded those published.

Adams, Bond, and Arber (1995) developed and validated a job satisfaction survey instrument, the Nursing Opinion Questionnaire. This is a 6-item (feedback, expectations, resignation, worthwhile job, bad for my health, and working relationships) instrument that uses a 4-point Likert scale. Psychometric properties of the scale include a Cronbach's alpha of 0.77 and a test-re-test Pearson correlation coefficient of 0.77. In this study, the Cronbach's alpha coefficient was similar (0.733).

To assess face and content validity of the combined survey instrument, four health care experts—a certified industrial hygienist with 20 years of experience in health care settings, a researcher working with the North Carolina Division of Facility Services who is developing a national nursing home survey of direct care workers, a member of a hospital board of directors who trains and studies direct care workers, and a registered nurse—reviewed it. After changes were made to the survey instrument based on expert review, it was administered to a convenience sample of 25 direct care workers; 18 completed the survey (response rate = 72%). The majority of pilot study respondents were female (100%), had the title of nursing aide or assistant (88.9%), and worked in a nursing home or residential facility (52.9%). Some wording in the instrument was double barreled (i.e., subparts of a question could be answered differently) and subsequently corrected.

The participants in this study were direct care workers who attended the Mountain Area Health Education Center Nursing Assistant Training Day on October 5, 2005 (n = 125). The self-report, written survey was given to attendees with their conference materials. During the opening, personnel introduced the researcher and indicated the completed surveys could be voluntarily and anonymously returned to the researcher’s table in the area. A

| Table 2 | Numbers of Near-miss and Injury Incidents Reported in the Past 4 Weeks |
| --- | --- | --- |
| **Total Number of Near-misses Reported** | **Number of Near-misses Reported by Nursing Aides** | **Number of Near-misses Reported by Home Health Aides** |
| 10 | 9 | 1 |
| **Total Number of Injuries Reported** | **Number of Injuries Reported by Nursing Aides** | **Number of Injuries Reported by Home Health Aides** |
| 9 | 7* | 2 |

*Significant difference in number of injuries based on job title ($\chi^2 = 4.179, df = 1, p = .041$).

| Table 3 | Correlation Analysis |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Hours** | **Tenure** | **Training** | **Satisfaction** | **Safety Climate** | **Organizational Climate** | **Stress** |
| 1. Age | -.190 | .446** | -.064 | -.091 | .043 | -.162 | -.042 |
| 2. Hours | - | -.034 | .082 | .024 | -.128 | .053 | .037 |
| 3. Tenure | - | -.201* | -.284** | -.061 | -.330** | -.284** |
| 4. Training | - | .464** | .501** | .471** | .378** |
| 5. Satisfaction | - | -.597** | .584** | .408** |
| 6. Safety climate | - | - | .476** | .252* |
| 7. Organizational climate | - | - | - | .613** |
| 8. Stress | - | - | - | - |

*Correlation is significant at the .05 level (two-tailed). **Correlation is significant at the .01 level (two-tailed). Because all correlations were completed together, and no specific justification that each correlation would be positive or negative existed, a two-tailed test was run.
self-addressed, stamped envelope was provided if respondents preferred to use traditional mail; none chose this option. One hundred eleven surveys were collected (response rate = 88.8%). Six surveys were not analyzed because respondents failed to answer a substantial number of items or the dependent variables. Regarding the latter, if respondents did not answer the questions about injury or near-miss, then there were no dependent variable answers and these surveys were not used. First, Cronbach’s alpha was calculated to determine the reliability of the scales used to measure the independent variables (i.e., training, organizational climate, safety climate, stress, and job satisfaction). Next, frequencies for demographic indices, covariates, and dependent variables (i.e., near-miss and injury) were computed. The chi-square test for goodness of fit was used to determine if a difference existed in the proportion of injuries and near-misses between nursing aides, orderlies, attendants, and home health aides. Spearman’s rho was used to calculate correlations between categorical variables. Finally, logistic regression analysis was used to identify variables for injury prediction.

RESULTS

Instrument face and content validity was previously affirmed by expert review and literature documentation. As reported in the previous section, all scales had a Cronbach’s alpha greater than 0.7, demonstrating internal consistency reliability. The demographic and organizational covariates were reported using frequency measures (Table 1). Direct care workers were primarily female (92.4%), held the title of “nursing aide or assistant” (86.7%), worked in a nursing home or residential facility (40.8%), worked between 31 and 40 hours per week (62.5%), and had worked 3 or more years at their current place of employment (54.8%). The numbers of injuries and near-misses are reported in Table 2; of those injured, back sprains, bruises, cuts, and head injuries were reported. Using chi-square, a significant difference in injury rates was found between nursing aides and home health aides ($n = 94$; $\chi^2 = 4.179$, $df = 1$, $p = .041$).

Table 3 depicts variables with significant correlations (Spearman’s rho). Tenure was positively correlated with safety training frequency and negatively associated with the independent predictor variables, training, satisfaction, organizational climate, and stress. As tenure increased, the level of training, satisfaction, organi-
zational climate, and stress decreased. The independent variables were coded so that low numbers depicted an increased risk of injury. Although counterintuitive, a low stress score indicated a higher risk of injury. The significant correlations among the independent variables were all positive; training was positively associated with satisfaction, safety climate, organizational climate, and stress. Descriptive statistics for the independent predictor variables (Table 4) indicated organizational climate had the highest mean score (lowest risk of injury), and stress had the lowest mean score (highest risk of injury). Possible predictors of injury were tested using logistic regression. Due to the ratio of predictor variables to number of cases, the number of predictor variables was limited during each iteration. Job satisfaction was a significant predictor when tenure was limited to greater than 1 year (Table 5). Table 6 indicates job satisfaction and training were significant predictors when tenure was greater than 3 years.

**DISCUSSION**

This study gained insight into factors other than traditional safety approaches to injury prevention among direct care workers and provides a framework for future study. Although training (proper lift techniques and lifting equipment) is essential, this alone has not been effective in reducing direct care workers’ injuries. The demographics and near-miss (9.6%) and injury (9.1%) frequencies were similar to those nationally (Bureau of Labor Statistics, 2004), but much lower than those reported by direct care workers who work in nursing homes (56%, N = 304,400), according to the 2004 National Nursing Assistant Survey (Centers for Disease Control and Prevention, 2008). The National Nursing Assistant Survey asked direct care workers in nursing homes about injuries in the past year, whereas this study reported injuries in the past month.

The inconsistency of standard occupational titles and grouping of injury rates of all direct care workers regardless of facility or home-based work limit studies of direct care workers. As hypothesized, the difference in injury rates when comparing nursing aides and home health aides provided a basis for partitioning these workers’ injuries and the contributing factors. The difference in injury rates supports real-life conditions as home health aides work independently in their patients’ homes with few mechanical aids and experience limited social support from coworkers or organizational influences associated with reduced injury. Further, no one identified themself as an orderly or attendant; these titles may no longer be useful.

The influence of tenure was an unexpected, intriguing finding and provided the basis for restricting regression analysis to those participants who had assimilated to their current job. The scale used to measure tenure was a limitation of this study as it focused on the first year of work (Table 1). Tenure exhibited negative associations with training, job satisfaction, organizational climate, and stress. Correlation does not constitute causation; however, this study indicated that direct care workers with greater tenure had lower perceptions of training, job satisfaction, and organizational climate and higher frequency of stressful events.

The literature relating tenure and injury is sparse. A study by Breslin and Smith (2006) of Canadian workers’ compensation records and labor force survey data determined that injury and illness claim rates declined as tenure increased. In contrast, this study found 77% of injuries occurred

| Table 6 |
| Logistic Regression—Tenure Greater Than 3 Years |
| (N = 57) |

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>p</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic or organizational</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Title—nursing aide</td>
<td>2</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Title—home health aide</td>
<td>1</td>
<td>.999</td>
<td>1E + 008</td>
</tr>
<tr>
<td>Title—other</td>
<td>1</td>
<td>.998</td>
<td>1E + 017</td>
</tr>
<tr>
<td>Place—nursing home or residential</td>
<td>3</td>
<td>.911</td>
<td></td>
</tr>
<tr>
<td>Place—hospital</td>
<td>1</td>
<td>.991</td>
<td>1.015</td>
</tr>
<tr>
<td>Place—home or private residence</td>
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<td>.801</td>
<td>0.668</td>
</tr>
<tr>
<td>Place—other</td>
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<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Age</td>
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<td>.975</td>
<td></td>
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<tr>
<td>Hours—21 to 30</td>
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<td>.999</td>
<td>0.000</td>
</tr>
<tr>
<td>Hours—31 to 40</td>
<td>1</td>
<td>.824</td>
<td>0.791</td>
</tr>
<tr>
<td>Hours—&gt; 40</td>
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<td>.361</td>
<td>0.478</td>
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<td>Independent</td>
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<tr>
<td>Training</td>
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<td>.044*</td>
<td>31.821</td>
</tr>
<tr>
<td>Satisfaction</td>
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<td>.033*</td>
<td>0.002</td>
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<tr>
<td>Safety climate</td>
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<td>0.755</td>
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<td>.140</td>
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<tr>
<td>Stress</td>
<td>1</td>
<td>.361</td>
<td>0.478</td>
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*p < .05.
after 1 year of tenure; the Bureau of Labor Statistics (2004) reported 58% of injuries occurred among direct care workers with greater than 1 year of tenure. Musculoskeletal disorders are often the result of repeated trauma over time and longer tenure increased the risk of injury. Direct care workers had the highest rate of musculoskeletal disorders in the United States, 293 per 10,000 (U.S. Department of Labor, 2007).

Significant correlations among the predictor variables were all positively associated. For example, training was positively associated with satisfaction, safety climate, organizational climate, and stress. These relationships indicate that changing any of these variables may influence injury rates and retention; however, the exact combination may vary. This finding is supported by Mark et al. (2007), who reported the interaction of safety climate and work conditions predicted needlestick injuries; however, if either work conditions or safety climate was low, more needlestick injuries were predicted. A strong safety climate alone did not predict lower injuries.

On the basis of the influence of tenure on injury rates of direct care workers, as well as the chronic nature of musculoskeletal disorders and their high prevalence among direct care workers, logistic regression was used to analyze the data for workers who were employed at the current facility more than 1 year (job satisfaction significant) and more than 3 years (training and satisfaction significant). Both scales included an item about personal feedback on job performance and use of safe work practices. Feedback and active engagement with direct care workers’ concerns may provide a more positive environment, increasing perception of decision latitude and social support.

The job satisfaction scale included items about feedback, expectations, potential resignation, doing a worthwhile job, job bad for my health, and working relationships. The importance of job satisfaction is further supported by the National Nursing Assistant Survey: 20.3% were dissatisfied with workplace morale and 31.7% did not agree that they were respected and rewarded for their work (Centers for Disease Control and Prevention, 2008). When asked what types of problems make it difficult to work at a facility or make nursing assistants dislike their job, 29.7% reported a problem with coworkers, 25.6% reported workload, and 23.2% reported a problem with supervisors or nurses (Centers for Disease Control and Prevention).

The training scale included items such as feedback on work tasks and safe behavior, new employee orientation, and in-service or continuing education programs. The importance of proper training cannot be overlooked; training alone does not prevent injuries. Nurses cited that safety policies are not followed because the extra time to comply may be harmful to patients (Williams, Campbell, Henry, & Collier, 1994). Forty-two percent of National Nursing Assistant Survey respondents reported they did not have enough time to assist residents with activities of daily living (Centers for Disease Control and Prevention, 2008). The reasons given for noncompliance related directly to staffing levels; adequate nurse staffing levels have been reported to correlate with fewer injuries (Castle, Engberg, Mendeloff, & Burns, 2009; Trinkoff, Johantgen, Muntaner, & Le, 2005).

The relationship between psychosocial factors and injury is limited in the direct care worker literature and should be carefully examined to reduce injury and increase retention. The use of psychosocial variables as predictors of injury is supported by the National Nursing Assistant Survey: 44.7% of respondents reported they may leave their facility in the next year due to problems with facility policies or working conditions (15.6%), too many residents to care for (14.1%), problems with supervisors (10.2%), or problems with coworkers (6.0%) (Centers for Disease Control and Prevention, 2008).

This study supported that factors, other than those traditionally used to create a safe work environment, are relevant in predicting and ultimately preventing injuries. Predictors of injury, training and job satisfaction, align with the DCS model—direct care workers have high workloads, low decision latitude, and low social support. This combination of factors leads to negative health outcomes (injury). Future studies should consider individual personality characteristics as a moderator of work stress and strain, as well as factors outside the workplace (family, living conditions, and other jobs).

**IMPLICATIONS**

The high prevalence of direct care worker injuries cannot be solved with a single solution. Training on proper lifting techniques (manual or equipment) must be continued. The effectiveness of lifting devices to prevent musculoskeletal disorders is dependent on direct care workers’ willingness to correctly use them; this in turn is influenced by staffing levels, safety climate, and organizational climate. Training is not effective unless it is actually practiced, supported, and enforced. Addressing training in isolation limits effectiveness and wastes resources. Organizations with high direct care worker injury rates and difficulties with retention should first examine their training, and then factors that affect consistent implementation of safety policies. The Centers for Disease Control and Prevention (2006) indicated safe lifting programs reduced injury rates and increased satisfaction; success of the project required direct care workers’ input into selection of equipment, adequate staffing, follow-up to ensure proper use, convenient access to equipment, and opportunities for assessment and re-training.

In this study, both training and job satisfaction were identified as predictors of injury; both of these scales asked about feedback from supervisors on work and safety practices. Direct care workers’ supervisors should consider frequent feedback as an initial strategy to reduce injuries and increase retention. Further, changing aspects of workplace culture is a potential intervention strategy. The
IN SUMMARY

Psychosocial Factors Contributing to Occupational Injuries Among Direct Care Workers
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1 The need for direct care workers is increasing dramatically; caring for the aging population is dependent on direct care workers’ ability to provide consistent care.

2 The predictors of injury found in this study, training and job satisfaction, challenge administrators to consider the effectiveness of their training programs and other organizational factors in the workplace.

3 A two-way dialogue with direct care providers provides an opportunity for correcting work and safety practices, as well as gaining insight into factors that prevent adherence to standard operating procedures.

4 Health care organizations should consider differences in the experiences of direct care providers between their first and subsequent years of employment, as the majority of injuries occur after the first year. Further, injury rates of home-based direct care providers are higher than those who work in a facility; the dissimilar work environments require varied intervention strategies.

National Nursing Assistant Survey data supported that many direct care workers may leave their jobs due to poor working conditions, staffing levels, or problems with others. Although changing staffing levels have economic implications, providing support, mentoring, and respect for direct care workers has little cost and potentially great benefit for improving job satisfaction. Job satisfaction was correlated with stress, organizational climate, and safety climate. Changes in any of these factors may lead to a more productive work environment with fewer injuries.

The differences between those who work in a facility and those who work in home health are significant and should be considered separately. The level of independence, social support, and availability of lifting devices and peer assistance vary substantially. Further, the differences in the experiences of direct care workers between their first and subsequent years of employment should be studied. Specifically, is the prevalence of injuries after the first year of employment from cumulative trauma or less organizational support? The investment in workers over time is undermined by high injury rates. Direct care workers’ lost time and potential inability to return to full duty severely impact patient care and exacerbate recruitment and retention. The factors described in this study challenge organizations to consider varied interventions to lower injury rates and researchers to examine them independently.

REFERENCES


