FEATURE ARTICLE
Research

# Nurses' Inclination to Report Work-Related Injuries

## Organizational, Work-Group, and Individual Factors Associated with Reporting

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**Abstract**

**Work-related injuries such as back strain are common among health care workers. Work-related injury data are a primary data source with which managers can assess workplace safety, yet many work-related injuries go unreported. This study examined organizational, work-group, and individual factors, and nurses' inclination to report a work-related injury. Using a cross-sectional mailed survey, a probability sample of currently employed nurses ($N$ = 1,163) indicated their inclination to report a workplace injury. Inclination to report injuries was higher in organizations with onsite health programs and when health and safety committees included non-management nurses and occupational health representatives. Reporting was reduced when nurses felt a lack of concern for staff welfare from supervisors and a climate of blame for worker injuries were present. Nurses were also less inclined to report work-related injuries when working in jobs with non-standard work arrangements. Improvements in the reporting climate may influence the completeness and, thus, the value of injury data for identifying hazards in the workplace. These data could provide valuable information for targeting preventive initiatives.**

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Work-related injuries are common among health care workers. In the year 2000, approximately 247,000 workers in nursing homes and personal care facilities (13.7 per 100 full-time equivalents [FTE]), and 329,000 hospital workers (8.3 per 100 FTE) suffered injuries on the job, with injury rates similar to heavy industries such as iron and steel forging and concrete work (Bureau of Labor Statistics, 2000b). Although overall injury rates for registered nurses are unavailable, musculoskeletal injuries, such as back injuries, have been reported to affect as many as 30% to 60% of registered nurses (Engels, van der Gulden, Senden, & van't Hof, 1996; Lagerstrom, Wenemark, Hagberg, & Hjelm, 1995; Larese & Fiorito, 1994; Smedley, Egger, Cooper, & Coggon, 1995). Injured nurses used a median of 4 sick days per injury in 2000, and one-fifth of cases involved more than 20 days away from work (Bureau of Labor Statistics, 2000a). Other costly consequences of work-related injuries include modified duty, disability, and job change (Shannon & Lowe, 2002; Trinkoff, Lipscomb, Geiger-Brown, & Brady, 2002). Injuries are caused by overexertion and other work demands, such as lifting heavy loads (Lagerstrom et al., 1995; Trinkoff, Lipscomb, Geiger-Brown, Storr, & Brady, 2003).

Despite the frequency and severity of injuries, underreporting of injuries is common (Pransky, Snyder, Dembe, & Himmelstein, 1999; Shannon & Lowe, 2002). Weddle (1996) surveyed hospital workers and found that although 29% had experienced a work-related injury in the previous year, only 61% of cases were actually reported—even though two-thirds of these injuries required health care and 44% resulted in lost time from work. In Shannon and

## What Does This Mean for Workplace Application?

Accurate and complete injury reporting is essential to identifying and understanding hazards in the workplace. The authors found organizational factors, such as the presence of onsite occupational health services and non-management representation on health and safety committees, positively influence nurses' inclination to report work-related injuries. Nurses were less likely to report injuries when working in a climate of blame. Until actual reporting behavior is studied, administrators can encourage comprehensive injury reporting among nurses by making injury reporting convenient and blame-free.

Lowe's (2002) review of studies that provided rates of injury reporting, rates ranged widely (5% to 72% reported), but were generally poor. Without adequate reporting, it is difficult to know the types of injuries and under what work circumstances they occur to target prevention efforts.

Zohar (2000) suggests that a multi-level understanding of factors influencing inclination to report is needed. Zohar indicates that although policies and procedures originate at the organization level, they are executed at the work-group level. In addition, individuals have their own ideas about the "normalcy" of being injured at work and fear of reprisal, among other individual factors (Pransky, 1999). Organizational level factors that can be assessed include the presence and composition of a health and safety committee, onsite occupational health services, and safety incentive programs. At the work-group level, the supervisor's behavior toward the nurse and any climate of blame that would inhibit reporting can be assessed. Individual factors, including terms of employment (e.g., temporary, contract, or per diem workers), duration of employment, position, and type of work setting can be examined because these may influence the nurse's commitment to reporting injuries as well as the institution's investment in the nurse's safety and health.

Understanding the reporting environment is particularly important because changes in the health care delivery system put more nurses at risk for injury (Lipscomb, Trinkoff, Geiger-Brown, & Brady, 2004). Hospitals and home care agencies have used non-standard work arrangements (e.g., temporary, contract, or per diem workers) to handle staffing shortages and seasonal fluctuations (Lipscomb, Trinkoff, Geiger-Brown, & Brady, 2002; Norrish & Rundall, 2001; Shindul-Rothschild, Berry, & Long-Middleton, 1996). Although no studies reported the association between non-standard work arrangements and musculoskeletal injuries, Gallardo Lopez et al. (1997) found that nurses on "temporary contracts" had more than four times the risk of sustaining percutaneous exposures when compared to permanent staff. Aiken, Sloane, and Klocinski (1997) also found that temporary work assignments were associated with an increased rate of needlestick injuries to nurses. Thus, understanding nurses' terms of employment may be helpful to identify sub-groups of nurses who are at risk for injury and may be less likely to report them.

Most studies of injury reporting have assessed actual reporting rates and compared these to surveyed workers' reported injuries on the job. Another approach has been to examine the inclination to report injuries, if one occurred, to better understand the organizational climate (one component of safety climate). The purpose of this analysis is to describe factors associated with an inclination to report workplace injuries among registered nurses who worked in their current job more than 1 year, with consideration of organizational, work-group, and individual job factors associated with reporting.

## METHODS

### *Sample*

A random sample of 2,000 active licensed nurses was selected from licensure lists in two U.S. states. The response rate to viable addresses ($n$ = 1,933) from the mailed survey was 74% ($n$ = 1,420). This analysis was restricted to the 1,163 respondents currently employed in nursing, and working at their current jobs for at least 1 year. The sample was predominantly female (95%), White (83%), married (71%), and averaged 45 years of age. This is similar to the demographics of all U.S. nurses (U.S. Department of Health and Human Services, 2000). Half of the respondents had at least a college degree, two-thirds (69%) were employed as staff/general duty nurses, and more than half (57%) worked in hospitals.

### *Data Collection*

Data were collected using an anonymous survey mailed to homes in 1999 and 2000. Up to six contacts were made by first-class mail, including three questionnaires and incentives, using procedures recommended by Dillman (2000). Because the survey was completely anonymous, respondents could be deleted from future mailings by returning a postcard to the study office; completed surveys were returned elsewhere. The items reported on the survey were portions of an 8-page questionnaire used in the Nurses' Worklife and Health Study (Trinkoff et al., 2002). This questionnaire was piloted extensively prior to mailing.

### *Variables*

Inclination to report workplace injuries was measured by asking the following question: "In your workplace, how often are incident reports (occurrence screens) filed for nurse injuries, when one occurs?" Five possible responses were coded as follows: Each Time an Injury/Occurrence Happens, Depends on Situation, Rarely, Never, and Don't Know/Not Sure.

Safety climate was measured at three levels: organizational, work-group, and individual. Items were constructed based on literature review, including evidence of increasing interest in behavioral-based safety programs (Frederick, 2000). Organizational level variables included presence of onsite occupational and employee health services, safety incentive program (e.g., rewards or bonuses given for decreased accident/injury reports), and health and safety committee. Nurses were also asked to indicate who represented them on this committee. Because management participation

was present in nearly all cases, and union and collective bargaining representation was rare, only occupational health staff and non-management nurse representation on health and safety committees was used to analyze the influence of the health and safety committee composition.

Work-group level safety climate variables included four items. Nurses were asked to indicate whether the supervisor was concerned about staff well-being and whether they paid attention to what the nurse said, with responses dichotomized into Strongly Disagree/Disagree and Agree/Strongly Agree. Two blame items asked if injuries were treated as the worker's fault (Yes/No), and if filing an injury report depended on fear of being blamed or punished (Yes/No).

Individual-level variables included job descriptors such as position (e.g., staff nurse vs. other), workplace (e.g., hospital, nursing home, ambulatory clinic), years with employer (1 to 5 years vs. > 5 years), and nonstandard work arrangements. Nurses were defined as having a non-standard work arrangement if they indicated their employment was contract, per-diem, temporary work, or self-employment without a full-time or part-time permanent position.

### *Analysis*

The prevalence of organizational, work-group, and individual factors were calculated for nurses working in their current job for at least the past year. Where Don't Know/Not Sure was checked, cases were eliminated from the analysis so only positive and negative responses remained. Inclination to report an injury if one occurred was dichotomized such that the criterion category was Each Time an Injury/Occurrence Happens (always), with other responses combined to form the reference category. Odds ratios were calculated for each factor. For place of employment, a sub-sample of hospital, nursing home, and ambulatory clinic nurses were used and other responses were eliminated from the analysis to eliminate unstable parameter estimates.

## RESULTS

Half of the nurses (51%) indicated they would always report an injury when it occurred, 16% reported it depended on the situation, 8% would rarely or never file a report, and 17% were not sure. Occupational and employee health services and a health and safety committee were present onsite for three-fourths of nurses. Few had non-management nurses (22%) or occupational health staff (17%) to represent their concerns. Only a few nurses (5%) reported a safety incentive program was present at their workplaces. When asked about presence of a health and safety committee, 18.6% responded with Don't Know/Not Sure, 8% didn't know if their site used a safety incentive plan, and 3.7% were not sure if they had onsite occupational health services. At the work-group level, nearly three-fourths indicated work-related injuries were not treated as the worker's fault. More than two-thirds reported their supervisors were concerned about their welfare and paid attention to their concerns. One-quarter of nurses worked in non-standard work arrangements. Sixty-nine percent worked in staff nurse positions, with a substantial percentage of longer-term employment with their current employer. Nearly three-fourths worked in hospital settings.

### *Inclination to Report*

Nurses were more likely to always report injuries when their workplaces had onsite occupational and employee health services, a health and safety committee, and when non-management nurses and occupational health staff were on the committee (see Table). Nurses indicated they would be more likely to report an injury in an atmosphere free of blame for a work-related injury. Attitudes of supervisors toward workers also played an important role in whether a nurse was always willing to report an injury. Workers who agreed or strongly agreed that their supervisors were concerned about staff well-being were significantly more likely to always report injuries as were workers who perceived that their supervisors paid attention to what nurses were saying. Workplaces with a safety incentive program had a small, statistically insignificant increase in likelihood of always reporting an injury if one occurred.

Nurses working in non-standard work arrangements, as staff nurses, in ambulatory care settings, and for the same employer for more than 5 years were less likely to report an injury if one occurred. Nurses who worked in nursing homes were more likely than those working in hospitals to always report an injury. There were no significant differences by scheduling variables (e.g., hours per day, hours per week, days per week), although 26% indicated that they would consider the time needed to file a report as a factor in deciding whether to report an injury.

## DISCUSSION

Reporting injuries, even if minor, is important because each occurrence is part of a pattern needed to identify a potential hazard in the workplace. Understanding hazards in the workplace is critical, because injuries result in lost time and productivity, disability, and early retirement. All of these results contribute to the current nursing shortage and to rising health care costs. Injury reports may be the only regularly available source of data on workplace safety among nurses.

These data suggest organizational factors are associated with nurses' inclination to report injuries. Nurses were more inclined to report injuries when onsite occupational and employee health services were present. As outsourcing of occupational health services becomes increasingly common (Dyck, 2002), the convenience of reporting an injury may differ from when occupational health services were available onsite. It was encouraging to hear that incentive programs that discouraged reporting injuries or accidents were uncommon in nursing worksites. In places where monetary incentives are offered to reduce injury rates, reporting can be affected (Pransky et al., 1999).

Nurses with a functioning health and safety committee in their workplace were more likely to always report an injury. This was especially true if there was non-management and occupational health staff representation on the committee. Non-management nurses and occupational health staff members on a health and safety committee might function as convenient and acceptable liaisons to assist front-line workers in presenting safety issues to management. When nurses were unaware of a health and safety committee (i.e., responded with Don't Know/Not

Table

**Odds of Inclination to Always Report an Injury (Registered Nurses Employed 1 or More Years, *N* = 1,163)**

| *Factor* | *%* | *Odds Ratio** | *95% CI* |
|---|---|---|---|
| **Organizational** | | | |
| Has onsite occupational health services | 75 | 1.38 | 1.04 to 1.84 |
| Has health and safety committee | 73 | 2.20 | 1.61 to 2.99 |
| Occupational health staff on health and safety committee | 17 | 2.06 | 1.47 to 2.87 |
| Non-management nurses on health and safety committee | 22 | 1.94 | 1.44 to 2.60 |
| Has safety incentive program | 5 | 1.42 | 0.78 to 2.58 |
| **Work Group** | | | |
| Work-related injuries treated as the employee's fault (No) | 72 | 1.77 | 1.29 to 2.42 |
| Filing a report depends on fear of being blamed or punished (No) | 89 | 3.22 | 2.12 to 4.90 |
| Supervisor concerned about the welfare of staff | 68 | 1.44 | 1.11 to 1.86 |
| Supervisor pays attention to what employee is saying | 72 | 1.47 | 1.12 to 1.93 |
| **Individual** | | | |
| Non-standard work arrangement (Yes) | 24 | 0.75 | 0.56 to 0.99 |
| Staff nurse (Yes) | 69 | 0.68 | 0.51 to 0.89 |
| Place of employment (*N* = 905) | | | |
| Hospital | 73 | 1.00 | |
| Nursing home | 11 | 1.91 | 1.19 to 3.07 |
| Ambulatory care | 16 | 0.62 | 0.42 to 0.91 |
| More than 5 years with employer | 64 | 0.72 | 0.56 to 0.93 |

** Odds ratios > 1 indicate condition would make nurses more likely to report injury. Odds ratios < 1 indicate condition would make nurses less likely to report injury.*

Sure), the inclination to report was similar to those with no health and safety committee, suggesting that an invisible committee is not effective in encouraging injury reporting. The nurse's perception of how the information will be used (i.e., the responsiveness of the organization to the reported injury) might influence reporting. Thus, if nurses felt the report would not be acted upon, they may be less inclined to file reports. Feedback to reporters is thought to increase the rate of reporting for patient safety events (Kohn, Corrigan, & Donaldson, 2000), and the researchers speculate that a similar mechanism may operate in this situation.

These data suggest that the reporting climate at the work-group level is critical to nurses' inclination to report injuries. When supervisors show concern for the nurses' well-being, or when the nurses feel their supervisors are listening to them, they are more likely to report an injury. Zohar (2000) posits that the safety climate is best communicated at the work-group level, and that supervisors can be taught to improve communication by reinforcing interactions with workers that support safety. Any climate of blame for injuries or sense of unresponsiveness from the supervisor could make reporting less likely. Pransky et al. (1999) also described non-reporters' concerns about reprisal and previous non-responsiveness of management as reasons for failing to report an injury. Just as blame hampers the reporting of patient errors (Kohn et al., 2000), it is likely the same dynamic operates in this situation.

Nurses in jobs with non-standard work arrangements were less inclined to report injuries than workers with a permanent position. This may be related to job security, as Quinlan and Mayhew (1999) noted decreased injury reporting under precarious employment conditions. This has important implications for nursing because the use of non-standard work arrangements for nurses has increased because of downsizing, organizational mergers, and restructuring to reduce costs under managed care (Buerhaus & Staiger, 1996). Nurses who have been with their current employer for at least 5 years may choose to use informal methods of reporting injuries based on their experience of avoiding "red tape" in the organization.

## LIMITATIONS

The concern that causal relationships cannot be inferred from a cross-sectional design are not relevant to this study because the exposure (i.e., organizational, work-group, individual factors) is present, and the outcome variable (i.e., inclination to report) is related to the potential of a future event. Nonetheless, a nurse's inclination to report and actual reporting behavior af-

ter injury may differ. Recall problems may have affected these responses, though this analysis included only nurses working in their current job for 1 year or more, and items were framed to respond about the current job. The researchers offered a Don't Know/Not Sure option for inclination to report. Nurses who selected this option were more likely to be employed in a nonstandard work arrangement, ambulatory care setting, or in private duty nursing, and were less likely to be a nurse manager or supervisor.

This study drew a sample from two U.S. states, one with high and one with low managed-care penetration when the study began. Although only two states are represented, the demographics of registered nurses in this sample resemble those of U.S. registered nurses as a whole (U.S. Department of Health and Human Services, 2000). Researchers piloted this instrument prior to presenting it to the large sample, and did not discover problems with question wording. No test–retest reliability was assessed, so the researchers cannot comment on the stability of these measures; however, these are likely to depend on the changeability of the work context. A factor analysis of items sorted these as predicted by item type (boss concern, procedures for reporting, climate of blame, representation on safety committee), thus strengthening the estimate of validity of the measure.

A strength of this study is the relatively high response rate (74%) for a mailed survey, with representation of nurses working under a variety of employment conditions, specialties, and settings. Researchers did not collect information identifying the employers of these respondents, and so cannot adjust for any nesting at the organizational level. However the likelihood of clustering at the workgroup level is small.

## SUMMARY

Accurate and complete injury reporting is key to understanding workplace hazards. The researchers found specific factors are related to inclination to report a work-related injury, such as the presence of onsite occupational health services and health and safety committees containing non-management representatives. Nurses indicated their inclination to report was reduced when they believed they would be blamed for the injury or accident. Further studies are needed to identify actual reporting behavior. In the meantime, administrators should make reporting convenient and blame-free to encourage more complete injury reporting among nurses.

*This study was funded by NIOSH R01OH03702.*

## REFERENCES


Aiken, L.H., Sloane, D.M., & Klocinski, J.L. (1997). Hospital nurses' occupational exposure to blood: Prospective, retrospective, and institutional reports. *American Journal of Public Health, 87*(1), 103-107.

Buerhaus, P.I., & Staiger, D.O. (1996). Managed care and the nurse workforce. *The Journal of the American Medical Association, 276*(18), 1487-1493.

Bureau of Labor Statistics. (2000a). *Lost workday cases—Injuries only, 2000.* Retrieved April 11, 2005, from http://bls.gov/iif/oshwc/osh/os/ostb1016.txt

Bureau of Labor Statistics. (2000b). *Total recordable cases—Injuries and illnesses, 2000.* Retrieved April 11, 2005, from http://bls.gov/iif/oshwc/osh/os/ostb1010.txt

Dillman, D.A. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). New York: John Wiley & Sons.

Dyck, D. (2002). Outsourcing occupational health services: Critical elements. *AAOHN Journal, 50*, 83-93.

Engels, J.A., van der Gulden, J.W., Senden, T.F., & van't Hof, B. (1996). Work related risk factors for musculoskeletal complaints in the nursing profession: Results of a questionnaire survey. *Occupational and Environmental Medicine, 53*(9), 636-641.

Frederick, J. (2000). Blame the worker: The rise of behavioral-based safety programs. *Multinational Monitor, 21*(11), 10-12.

Gallardo Lopez, M.T., Masa Calles, J., Fernandes-Crehuit Navajas, R., de Irala Esteves, J., Martinex de la Concha, D., & Diaz Molina, C. (1997). Factors associated with accidents caused by percutaneous exposure in nursing staff at a tertiary level hospital. *Revista Española de Salud Pública, 71*, 369-381.

Kohn, L.T., Corrigan, J.M., & Donaldson, M.S. (2000). *To err is human, Building a safer health system.* Washington, DC: National Academy Press.

Lagerstrom, M., Wenemark, M., Hagberg, M., & Hjelm, E.W. (1995). Occupational and individual factors related to musculoskeletal symptoms in five body regions among Swedish nursing personnel. *International Archives of Occupational and Environmental Health, 68*(1), 27-35.

Larese, F., & Fiorito, A. (1994). Musculoskeletal disorders in hospital nurses: A comparison between two hospitals. *Ergonomics, 37*(7), 1205-1211.

Lipscomb, J.A., Trinkoff, A.M., Geiger-Brown, J., & Brady, B. (2002). Work-schedule characteristics and reported musculoskeletal disorders of registered nurses. *Scandinavian Journal of Work, Environment, and Health, 28*(6), 394-401.

Lipscomb, J.A., Trinkoff, A., Geiger-Brown, J., & Brady, B. (2004). A changing health care system and reported musculoskeletal disorders in registered nurses. *American Journal of Public Health, 94*(8), 1431-1435.

Norrish, B.R., & Rundall, T.G. (2001). Hospital restructuring and the work of nurses. *The Milbank Quarterly, 79*(1), 55-79.

Pransky, G., Snyder, T., Dembe, A., & Himmelstein, J. (1999). Under-reporting of work-related disorders in the workplace: A case study and review of the literature. *Ergonomics, 42*(1), 171-182.

Quinlan, M., & Mayhew, C. (1999). Precarious employment and workers' compensation. *International Journal of Law and Psychiatry, 22*(5-6), 491-520.

Shannon, H.S., & Lowe, G.S. (2002). How many injured workers do not file claims for workers' compensation benefits? *American Journal of Industrial Medicine, 42*, 467-473.

Shindul-Rothschild, J., Berry, D., & Long-Middleton, E. (1996). Where have all the nurses gone? The results of our patient care survey. *American Journal of Nursing, 96*(11), 25-40.

Smedley, J., Egger, P., Cooper, C., & Coggon, D. (1995). Manual handling activities and risk of low back pain in nurses. *Occupational and Environmental Medicine, 52*(3), 160-163.

Trinkoff, A.M., Lipscomb, J.A., Geiger-Brown, J., & Brady, B. (2002). Musculoskeletal problems of the neck, shoulder, and back and functional consequences in nurses. *American Journal of Preventive Medicine, 41*(3), 170-178.

Trinkoff, A.M., Lipscomb, J.A., Geiger-Brown, J., Storr, C.L., & Brady, B.A. (2003). Perceived physical demands and reported musculoskeletal problems in registered nurses. *American Journal of Preventive Medicine, 24*(3), 270-275.

U.S. Department of Health and Human Services (2000). *The registered nurse population: Findings from the national sample survey of registered nurses.* Retrieved March 30, from ftp://ftp.hrsa.gov/bhpr/rnsurvey2000/rnsurvey00.pdf

Weddle, M.G. (1996). Reporting occupational injuries: The first step. *Journal of Safety Research, 27*, 217-223.

Zohar, D. (2000). A group-level model of safety climate: Testing the effect of group climate on microaccidents in manufacturing jobs. *Journal of Applied Psychology, 85*(4), 587-596.