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Low Back Injuries Among Home Health Aides Compared With Hospital Nursing Aides

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ABSTRACT. Data were collected from all incident reports of low back injury during 1984-1986 among nursing aides at one hospital and home health aides at two agencies in the Baltimore-Washington area. Respective rates of injury were 5.9/100 FTE's and 15.4/100 FTE's ($p < 0.001$). A majority of injuries occurred during patient-related, planned activities and without the use of lifting equipment. Forty percent of the events occurred at the bedside. Eighty-eight percent of home health aides were working alone compared with 39 percent of NAs. Ergonomic interventions may be an effective strategy to reduce injuries, since 50 percent of the events involved lifting and pushing/pulling activities.

INTRODUCTION

Nursing aides (NA) and orderlies have the highest rate of low back injuries among hospital nursing personnel (Jensen, 1987).

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Home health aides (HHA) provide similar physical care to patients in their homes, however, the work environment is different from the hospital setting. In addition, home health aides are exposed to risks while traveling between patient homes with public or private transportation.

A review of literature on low back injuries among nursing personnel found over 70 research articles, but none included HHAs (Jensen, Nestor, Myers and Rattiner, 1988). It has been known for many years that both HHAs and NAs are exposed to the physically demanding work of patient handling. The role of the home health aide has become increasingly important due to the demographic changes occurring in the U.S. population and trends to reduce hospitalization stay or long-term institutional care.

It was anticipated that HHAs would have more negative risk factors for back injury than NAs due to the different work environment and conditions. In the home the following factors could contribute to the risk of back injury: the lower height of beds, lack of height adjustability, access to beds, a greater likelihood of working without the possibility of getting help with heavy tasks, and unavailability of patient handling equipment such as patient lifts and transfer devices. This investigation was undertaken to examine the hypothesis that the rate of low back injuries among HHAs would be higher than that of NAs working in hospitals.

METHODS

Data was collected from all incident reports of low back injuries among NAs at a large medical center for a 3-year period 1984-1986. These data were compared with the data from all incident reports of low back injuries among HHAs employed by the two largest home health care agencies in the Baltimore-Washington area for the same period of time.

Denominator data for the hospital NAs were obtained from the medical center's salary and wage survey and annual report to the Maryland Hospital Cost Review Commission which enumerated the actual employees by category for each of the 3 years. Denominator data for the HHAs were obtained from the records of the Personnel Director of the home health agencies.

Data abstracted from the incident reports included sociodemographic factors, date, time and location of the event, and nature of the injury. From the descriptive section of the report the circumstances of the event were abstracted to include type of movement, activity/tasks at the time, lifting equipment used, and people involved.

Descriptive statistics were calculated for variables of interest. For the comparison of the rate of injuries in each group, a Z test was used, assuming the counts of the number of back injuries followed a Poisson distribution (Rosner, 1982).

RESULTS

Reports of low back injuries included 35 among the NAs and 56 by the HHAs. All but one soft tissue injury were described as a muscle strain/sprain. The mean age was 39 years (range 19-58) for the injured NAs, and 45 years (range 22-65) for the HHAs ($p < 0.01$). All HHAs were female compared to 60 per cent of the NAs. The median length of employment was 5 years for the NAs and 2 years for the HHAs.

The average annual rate of low back injuries among HHAs, 15.4 per 100 FTE's, was significantly higher than the rate for hospital NAs, 5.9 per 100 FTE's ($p < 0.001$).

Sixty-six percent of the injuries occurred during planned care or regular activities, such as transferring a patient from bed to wheelchair rather than spontaneous activities, such as catching a falling patient (Table 1).

For the incidents where patients were being handled, the caregiver was working alone in 88 percent of the injuries in the home compared to 39 percent in the hospital setting.

The data from the incidents where lifting tasks were described were examined to determine if equipment was used. In 75 percent of the incidents among NAs and 80 percent among HHAs, no lifting equipment was used.

Table 2 shows the specific activity reported at the time of injury. A majority of the injuries in each group resulted from patient-related activities. The proportion was similar, 71% for HHAs and 66% for NAs, and not statistically significant. Forty percent of the activities by the NAs and HHAs involved the patient's bed. Among

TABLE 1. Focus of Activity by Nature of Circumstances

	Nursing Aides (NA)		Home Health Aides (HHA)	
	(N)	(%)	(N)	(%)
<u>Patient-Related</u>				
Planned care/activity	19	54	35	63
Spontaneous	4	11	5	9
Total patient-related	23	65	40	72
<u>Non-Patient</u>				
Planned care/activity	3	9	6	11
Spontaneous	9	26	10	17
Total non-patient	12	35	16	28
Total Patient-related and non-patient	35	100	56	100

the HHAs one out of five injuries involved moving the patient up in bed versus 1 out of 10 for NAs.

DISCUSSION

We believe this is the first descriptive report of low back injuries among HHAs. The rate of low back injuries among HHAs was 2.6 times that of the rate for hospital NAs, well known to be at extremely high risk for back injuries.

The rate of 15.4 low back injuries per 100 full-time HHAs is even higher than the combined injury *and* illness incidence rate for nursing home personnel in the United States, 11.6 per 100 full-time workers in 1984 and 15.0 in 1988 (Bureau of Labor Statistics [BLS], 1989). The illness and injury incidence rates for all health services in 1984 and 1988 were 6.3 and 7.3, respectively (BLS, 1989).

Unlike NAs, home health aides were typically working alone when these injuries occurred. Several questions related to this find-

TABLE 2. Activity at the Time Caregiver was Injured

Nursing Aides (NA)			Home Health Aides (HHA)		
<u>Patient-Related</u>	N	%	<u>Patient-Related</u>	N	%
Lifting to/from stretcher	5	14	Moving patient up in bed	12	21
Moving patient up in bed	4	11	Helping patient in/out bed	6	11
Turning patient in bed	3	9	Helping patient in/out chair	5	9
Caught patient starting to fall	2	6	Caught patient starting to fall	5	9
Helping patient from floor	2	6	Other	4	7
Helping patient in/out bed	2	6	Helping patient in/out tub	3	5
Restraining patient	2	6	Turning patient	2	4
Helping patient in/out chair	1	3	Stooped over patient in bed	1	2
Helping patient on/off toilet	1	3	Helping patient from bed	1	2
Other	1	3	Helping patient on/off toilet	1	2
<u>Non-Patient</u>			<u>Non-Patient</u>		
NA fell	8	23	Driving auto to patient's home	4	7
Moving furniture/equipment	3	9	HHA fell	3	5
Other	1	3	Moving furniture/equipment	3	5
			Slipped without falling	2	4
			Making bed	1	2
			Stepping down to lower level	1	2
			Walking from dwelling	1	2
			Unknown	1	2
Total Patient-Related and Non-Patient	35	100		56	100

ing need to be addressed. First, what is the agency procedure for assigning health care aides to patients? Who decides if the expected physical tasks demands are suitable for one person? What consideration is given to the following factors: the ability of the patient to reliably assist in movements and tasks and to weight-bear during a transfer activity; the weight and height of the patient; whether the height of the bed is adjustable; is lifting equipment available, affordable and feasible in the work space. Methods are available for assessing material handling tasks in industrial workplaces; however, assessment methods have not been developed to guide nursing personnel in assessing the demands of patient handling tasks. There is a compelling need for guidelines in this fast-growing industry. The number of Medicare certified home health agencies has increased from 2,333 in 1970, to 5,856 in 1987, in the United States (Szasz, 1990).

Most of the activities when the caregivers were injured were patient-related activities that can be anticipated and planned in advance. Because needs for care are usually known or can be assessed at the time of referral or the initial visit by the supervising registered nurse, strategies for patient handling could be a part of the planning process.

Over half of the incidents in each group of caregivers involved lifting or pulling/pushing activities. Since 50 percent of the incidents involved tasks of handling patients or materials, ergonomic interventions that have been successful (Garg and Owen, 1991a; Garg and Owen, 1991b; Owen and Garg, 1989) in other care settings where low back injury rates are high (Personik, 1990), may be appropriate for home health aides.

In institutional settings some type of lifting equipment can be obtained when the need is anticipated. The lifting equipment for the home environment may need to be different from the heavy hospital equipment, so that it is simple to use, can be used by one care provider, can be transported to the home by the caregiver, is affordable and can be retained and used by family or other caregivers. Factors that are important in the selection of such assistive devices have been systematically identified (Batavia and Hammer, 1990).

Forty percent of the injuries in each setting involved activities at the bed. Hospital bed design and control location have been examined in

relation to low back injuries among nursing personnel (Nestor, 1988). Suggested guidelines (Nestor, 1988) may provide ideas as to how beds in the home could be modified to reduce the physical demand on caregivers. Engineers, ergonomists and health professionals need to work together to design user-friendly and ergonomically evaluated equipment to facilitate caregiving and reduce this serious musculoskeletal injury problem.

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