

CHANGES IN MANUAL HANDLING ACROSS JOB TITLES BEFORE AND AFTER THE INTRODUCTION OF A NO-LIFT PROGRAM IN NURSING HOMES

Kurowski A, Boyer J, Fulmer S, Punnett L, Dept. of Work Environment, U. of Massachusetts Lowell, USA

Aims

Musculoskeletal disorders have been associated with physical work demands such as manual resident handling performed by nurses' aides in nursing homes. In 2005, a corporation with 217 nursing homes began to implement a No-Lift Program (NLP) in all of its facilities. This involved introducing several types of resident lifting equipment plus appropriate procedures and policies. Our objective was to investigate the effect of the NLP on ergonomic exposures through direct observations of manual handling activities, resident handling activities, and equipment use.

Methods

Ergonomic exposures of the clinical nursing staff (Registered Nurses, Licensed Practical Nurses, Geriatric Nursing Assistants, and Certified Medical Aides) were documented using PATH (Postures, Activities, Tools, and Handling)¹. This method for analyzing non-cyclical work was modified slightly to add resident handling activities, specific types of equipment, and space constraints that might interfere with equipment use. In eight of the last nursing homes to implement the program, we collected baseline data in May-August 2006 (12,301 observation moments) and three month follow-up data in August-November 2006 (11,708 observation moments). PATH variables of 'weight in hands' (categorical), 'manual handling action,' 'resident handling type,' and 'resident handling equipment' were analyzed before and after NLP implementation, within job title, using SAS 9.1. In particular, the frequency of manual handling by type of resident handling was compared pre- and post-intervention.

Results

In general, the distributions of observed exposures were similar before and after the NLP began. Among 'manual handling actions,' frequency of 'carry/hold' decreased notably among CMAs and less so among GNAs but increased in LPNs (table). 'Lift/lower,' similarly, decreased slightly among CMAs only. 'Push/pull/drag' increased among all job titles except RNs. 'Resident handling type' included the categories of 'ambulation assist,' 'reposition,' 'transfer,' and 'transport.' When categorized by weight in hands, the distributions of activities were comparable pre- and post-intervention in all job titles excluding LPNs, where the percentage of time spent repositioning residents increased from 1.44% to 5.82% after the introduction of the NLP. 'Resident handling equipment' ('gait belt,' 'slings,' 'slipsheet,' 'sit-to-stand lift,' and 'total body lift') was utilized nearly exclusively by GNAs. The use of sit-to-stand lifts was not recorded pre-intervention, but was observed 43 times (0.47% of all observations) post-intervention. As well, the use of slings doubled (0.24% vs 0.53%).

Table: Manual Handling Actions Pre & Post NLP as Percentage of Observations, by Job Title

| Pre NLP | Carry/Hold | Lift/Lower | Push/Pull/ Drag |
|------------|------------|------------|-----------------|
| GNA | 3.73 | 1.04 | 4.47 |
| CMA | 3.44 | 0.53 | 3.44 |
| LPN | 1.44 | 0.12 | 1.44 |
| RN | 0.52 | 0.00 | 1.22 |
| Post NLP | Carry/Hold | Lift/Lower | Push/Pull/ Drag |
| GNA | 3.26 | 1.56 | 4.87 |
| CMA | 0.79 | 0.39 | 3.54 |
| LPN | 2.08 | 0.48 | 2.01 |
| RN | 0.00 | 0.00 | 0.72 |

Conclusions

There were few changes in manual and resident handling frequency in the three-month follow up period, although these results may have been affected by staff turnover or training not yet completed. Ergonomic exposures will be reassessed by observation after 12 and 24 months, and concurrent questionnaires in the same facilities will be examined for information about why clinical staff might not use the equipment in some settings. Differences among jobs are of particular concern, as the employees in low socioeconomic positions with generally higher health risks are most in need of benefiting from this ergonomic intervention.

References

[1] Buchholz B, Paquet V, Punnett L, Lee D, Moir S. Appl Ergon 1996;27(3):177-87.