Ergonomics and Lifting Programs:

What works in nursing?

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Common Myths in the Nursing Profession and Healthcare Industry

- Nurses get hurt because they lift improperly.
- Manual lifting is more dignified for the patient.
- Equipment isn't needed when a second set of hands is available.
- The benefits of using lifting devices are unproven and too expensive to consider.
- There isn't enough scientific evidence to do things differently.

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Literature Reviews of Intervention Strategies (I)

Dr. S. Hignett reviewed 2796 papers published 1960-2001.

CONCLUSION: "Strong Evidence" that interventions predominantly based on technique training have no impact on working practices or injury rates.

SUMMARY: Most likely to be successful are "Multi-Factor" interventions based on a Risk Assessment model.

Hignett S (2003) *Intervention strategies to reduce musculoskeletal injuries associated with handling patients: A systematic review.* Occupational and Environmental Medicine **60: 2-8 (electronic).**

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Literature Reviews of Intervention Strategies (II)

Amick et al: Of 8465 articles, 40 studies were judged relevant and 16 ranked as medium-high or high quality.

Conclusions from the 16 quality studies:

- A "***moderate*** level of evidence was found for a POSITIVE effect on musculoskeletal health for multi-component patient handling interventions and physical exercise interventions."
- An **"insufficient**" number of high-quality studies …. on individual interventions such as: patient handling training, cognitive behavioral interventions, equipment and equipment training, pre-employment screen and return-to-work policies.

Amick B., Tullar J., Brewer S, Pompeii L, USA; Irvin E, VanEerd D, Chang A, Canada; Evanoff B, USA; Gimeno D, England. **SYSTEMATIC REVIEW OF INTERVENTIONS TO REDUCE MUSCUOSKELETAL DISORDERS IN THE HEALTH CARE SECTOR.** PREMUS2007 Conference Presentation.

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Training programs in “safe lifting” are not sufficient to prevent back injuries in nursing

- Brown, 1972
- Dehlin et al, 1976
- Anderson, 1980
- Daws, 1981
- Buckle, 1981
- Stubbs et al, 1983
- St. Vincent & Teller, 1989
- Owen & Garg, 1991
- Harber et al, 1994
- Larese & Fiorito, 1994
- Lagerstrom & Hagberg, 1997
- Daltroy et al, 1997
- Hignett, 2003

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Patient lifting and transfer tasks often exceed spinal tolerance levels

- Gagnon et al, 1986
- Torma-Krajewski, 1987
- Garg & Owen, 1991a
- Garg & Owen, 1991b
- Owen et al, 1992
- Homan 1994
- Winklemolen et al, 1994
- Ulin et al, 1997
- Marras et al, 1999
- Lavender et al, 2000

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Two-person manual lifts place nurses at risk of injury

- Garg & Owen, 1991a
- Garg & Owen, 1991b
- Winklemolen et al, 1994
- Marras et al, 1999

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Mechanical lifting devices reduce biomechanical loading on the back to safer levels

- Zhuang et al, 1999
- Elford et al, 2000
- Daynard et al, 2001
- Nelson, 2003

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Mechanical lifting devices do NOT eliminate all hazards

- Zhuang et al, 1999
- Daynard et al, 2001

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Mechanical devices reduce injuries from patient handling

- Garg & Owen, 1992
- Fragala & Santamaria, 1997
- Villeneuve, 1998
- Ronald et al, 2002
- Spiegel et al, 2002
- Owen et al, 2002
- Evanoff et al, 2003
- Collins et al, 2004
- Li, 2004
- Engkvist, 2006

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Components of Successful Ergonomics Programs

- ✓ Secure top management commitment and employee involvement
- ✓ Form ergonomics team
- ✓ Identify high-risk areas, tasks and injury trends

- ✓ Conduct assessment and review risk reduction strategies (equipment, patient assessment, work organization changes)
- ✓ Training and education
- ✓ Medical management and reporting strategies
- ✓ Ongoing evaluation and feedback

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UML study: "Pro-Care"
(Promoting Physical and Mental Health of Caregivers through Trans-disciplinary Intervention)

Chain of 217 nursing home facilities
(owned/managed by single company)

Company-wide no-lift program:

1. Training in equipment use by nurses
2. All equipment purchased from same vendor
3. Program included procedures for laundry, maintenance, and battery re-charging

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Effect of no-lift program on resident handling in nursing homes
(preliminary Pro-Care data)

- Increase in use of equipment* while handling residents**
- Decrease in amount of time spent actually handling residents
- Increase in time walking vs. standing still
- Increase in time with back straight vs. bent or twisted

**Equipment: Total body lifts, sit/stand lifts, slings, slide boards, slipsheets, & gait belts

*Resident Handling: Ambulation assist, reposition, transfer, & transport

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