The 35 Pound Limit and Better Understanding Safe Lifting Limits

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Recently I have noticed safe patient handling professionals and practitioners referencing and discussing the 35 pound limit as it refers to patient handling. In fact this was a topic of discussion in the recent work I participated in related to the development of the ANA Safe Patient Handling and Mobility Standards. I have observed some confusion as to what this 35 pound limit means and how it should be applied in the world of safe patient handling. I hope that through this newsletter article I can share some thoughts and provide a better understanding of the good work done by Tom Waters and NIOSH and how safe patient handling professionals can use this information.

To begin this discussion I would like to provide a brief history of the NIOSH lifting equation. The NIOSH lifting equation is probably the most well recognized work related to determining safe lifting limits and was originally released in 1981(NIOSH, 1981) then revised in 1991 to consider additional variables (Waters, Putz-Anderson, & Garg, 1994). Many practitioners wanted to try and apply the NIOSH lifting equation to patient handling activities. Initially it was determined that the NIOSH lifting equation was not applicable to patient handling tasks. In the documentation for the Revised NIOSH Lifting Equation, the authors indicated that the equation shouldn't be used for assessing the lifting of patients because it "does not include task factors that account for unpredictable conditions, such as unexpectedly heavy loads, slips, or falls" (Waters, 1993). Tom Waters was asked to consider how the "Revised NIOSH Lifting Equation" might be applied to patient handling tasks. Waters has proposed a safe lifting limit for patient handling activities of 35 pounds derived from application of the Revised NIOSH Lifting Equation. He also states that the limit might be less under less ideal conditions (Waters, 2007). What does this mean and how should it be interpreted by the safe patient handling practitioner? Basically when weight to be lifted, in a patient handling activity, exceeds 35 pounds, assistive devices should be used. This 35 pound threshold will be exceeded when considering most all manual patient handling lifting activities.

In addition to lifting tasks, there are also injury and MSD exposures related to pushing and pulling motions required to conduct care recipient repositioning activities and lateral transfers. It must be understood that this 35 pound limit only applies to lifting tasks. There are additional sources available which provide evidence to suggest guidelines for limits to determine when safe patient handling technology should be applied to reduce risks related to these pushing and pulling activities. These recommendations differ from the 35 pound threshold which has been suggested for lifting tasks. For example, applying the available published guidelines for acceptable push and pull forces, the maximum acceptable initial force, for 75% of the female population, for a pulling task with the hands positioned at a height of about 37.5 inches above the floor is about 58 pounds (Snook & Ciriello, 1991).

Musculoskeletal Disorders have been associated with the health care industry for many years. Researchers have repeatedly shown that "lifting properly" using good body mechanics cannot fully protect nurses or other Health Care Workers because the loads are simply too heavy (Waters, 2007, Nelson, Fragala, & Menzel, 2003). Should Safe Patient Handling Professionals be concerned with

determining what a safe load to lift is? The problem might be better approached by considering what loads are unsafe to lift. Evidence should be considered when trying to determine safe limits for patient handling tasks but it must be understood that actual prescribed limits are not practical due to the many variables involved in trying to determine what is safe or unsafe. The mission of safe patient handling is to identify high risk activities and make changes, applying safe patient handling technology, to reduce these task demands. Through proper application of safe patient handling technology the objective is to reduce risk to the caregiver as much as possible by minimizing the impact of risk factors such as force, repetition and posture.

How concerned should safe patient handling professionals be with trying quantifying and understanding forces involved in patient handling activities? My recommendation is as follows: Based on available evidence and an understanding of the demands related to manual patient handling tasks, in most all situations safe patient handling technology should be used to lift, laterally transfer or reposition dependent care recipients. The task and available assist technology should be assessed by competent persons and the impact of risk factors such as force, repetition and posture reduced to as low as is reasonably practical though the use of technology and/or improved task design.

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