Prime TC®: an ergonomic solution

Situation

A recent study has shown that work-related musculoskeletal injuries are particularly prevalent in the healthcare profession.[1] **The highest incidence of injuries are in caregivers who manually handle patients, including those who perform patient transport tasks.**[2] Traditionally, a heavy emphasis has been placed on designing transport devices that maximize patient comfort and minimize costs. However, little consideration has been given to design concepts that minimize caregiver burden.[3]

Study

The purpose of this study was to compare differences in operator trunk and upper extremity muscle activity and joint angles when operating the ergonomically designed Prime TC transport chair and two other seated transport devices.

This study was completed at the VA Pittsburgh Healthcare System in conjunction with the Human Engineering Research Laboratories and Department of Rehabilitation Science and Technology

Why is wrist flexor activity important?

- These muscles are present in the forearm and are often prone to injury and strain as their function is to facilitate movement of the wrist.
- May reduce musculoskeletal strain on forearm muscles and protect the wrists from developing cumulative trauma injuries.[4]

Stryker solutions:

Ergonomic features specific to Prime TC Transport Chair include:

Adjustable armrests and footrests for ease in patient egress/ ingress

Vertically oriented push handles that position caregivers elbows at an ergonomic 90-degree angle

Highly maneuverable frame with anti-tip wheels

One touch central brake pedal that eliminates bending when initiating wheel locks

Findings

The traditional depot-style wheelchair required more effort to push, increasing strain on the caregivers during mobility tasks. Additionally, subjects used significantly less wrist flexor activity when using the Prime TC transport chair compared to the standard transport chair.[4]

These results demonstrate the importance and efficacy of ergonomic design features in transport devices in promoting better caregiver postures and helping to reduce operator musculoskeletal strain[4]. Additionally, by customizing Prime TC transport chair to caregivers, a more enjoyable transport experience can be provided to both the caregiver and the patient.

In conclusion, the implementation of ergonomic seated transport devices in hospitals and clinics has the potential to mitigate incidence of work-related musculoskeletal injury.[4]

References

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