

BACKGROUND

Growing evidence exists for the effectiveness of safe patient handling equipment in reducing the severity and number of musculoskeletal injuries to healthcare workers. There is anecdotal evidence that staff perceive this equipment to require more time and that this is a major barrier to ceiling lift use. Another concern with patient handling equipment is patient comfort during transfer.

OBJECTIVES

- To determine the amount of time required to perform various patient transfer tasks with ceiling lifts and floor lifts.
- To compare patient comfort levels during transfer using ceiling lifts and floor lifts



METHODS

A prospective observational design was adopted to measure and compare three categories of patient-handling methods:

- Ceiling lifts
- Floor lifts
- Manual lifting

Three types of frequent patient-handling tasks were observed at long-term care facilities in different stages of ceiling lift implementation:

- transfers from bed to chair
- transfers from chair to bed
- repositioning in bed/boosting patient up in bed

The time (preparation, actual and total time) to complete these tasks and patient comfort levels (using an observational scale) during the transfer were measured by observers.

Observers began timing at the first sign of preparation for a transfer/repositioning and stopped when the patient was safely transferred to the new surface or position.

The patient comfort observational scale rated alertness, calmness/agitation, physical movement, muscle tone and facial tension of the patient during transfer with higher scores representing increased discomfort.

Only residents requiring mechanical aides for transfer were included.

RESULTS

- A total of 119 patient transfers were observed. Of these, 78 were transfers from bed-to-chair, 32 were from chair-to-bed and 28 were repositioning/boosting.
- The average times for bed to chair transfers were longer for floor lifts compared to ceiling lifts for preparation (99s to 173s), actual transfer (57.9 s to 100.6s), and total time.
- For chair to bed transfers, ceiling lifts also took less time compared to floor lifts for preparation (59.7s to 183.3s), actual transfer (52.1s to 104.6s), and total time.
- With respect to repositioning tasks, ceiling lifts took significantly longer (59.5s to 24.9s) to complete the task when compared to manual techniques.
- Using the General Linear Model, the differences continued to exist for all the measures after adjustment for potential confounding factors such as facility, number of staff involved in the transferring/boosting, age, gender and weight of the residents ($p \leq 0.001$).
- Ceiling lifts were observed to be more comfortable for patients than floor lifts.

FIGURE 1: Average amount of time required between activities using ceiling lifts vs. floor lifts during bed to chair transfers

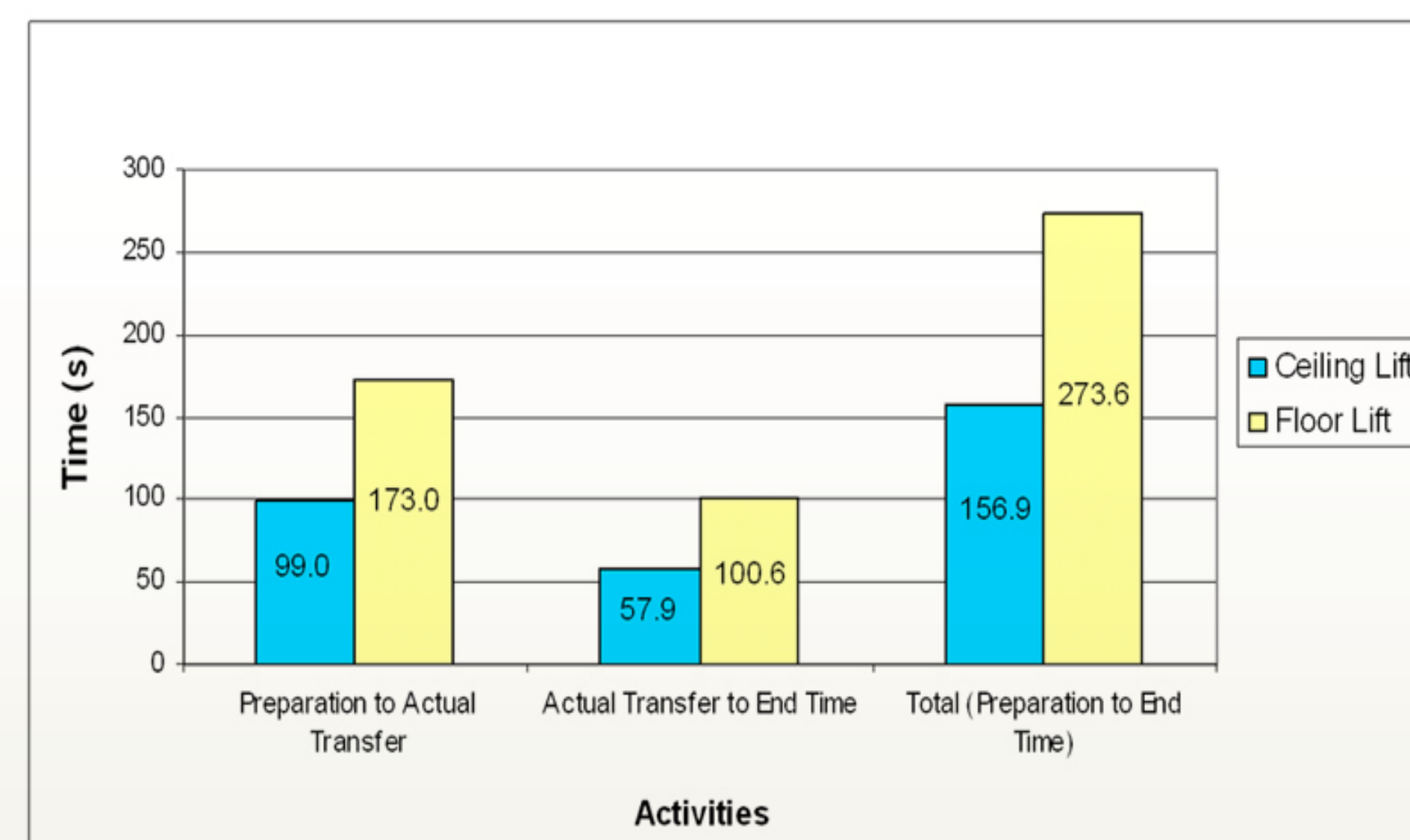


FIGURE 2: Average amount of time required between activities using ceiling lifts vs. floor lifts during chair to bed transfers

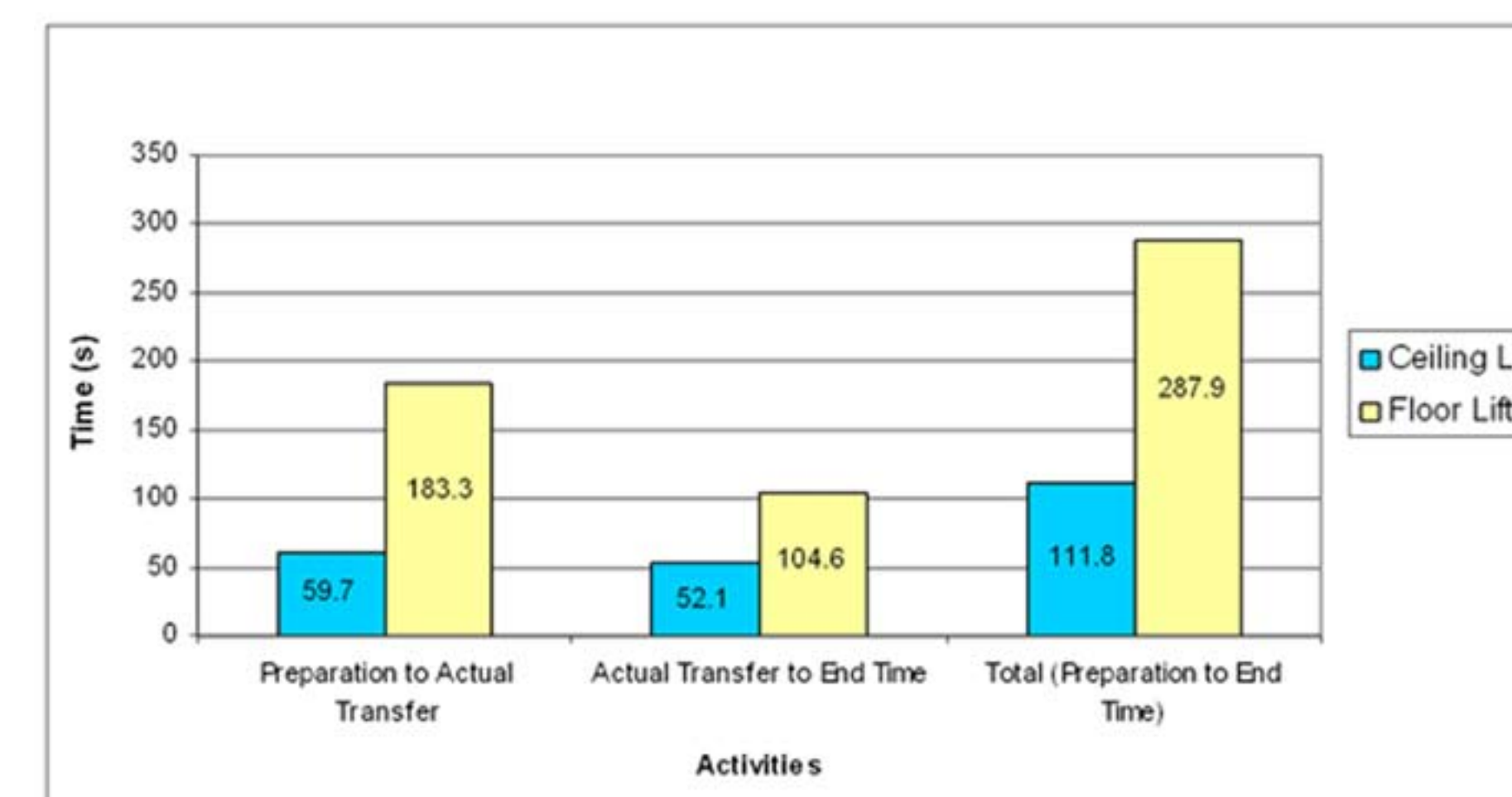


FIGURE 3: Comparisons of means between ceiling lifts, manual lifts with sliding sheet and manual lifts with soaker pad for the task of repositioning/boosting patients

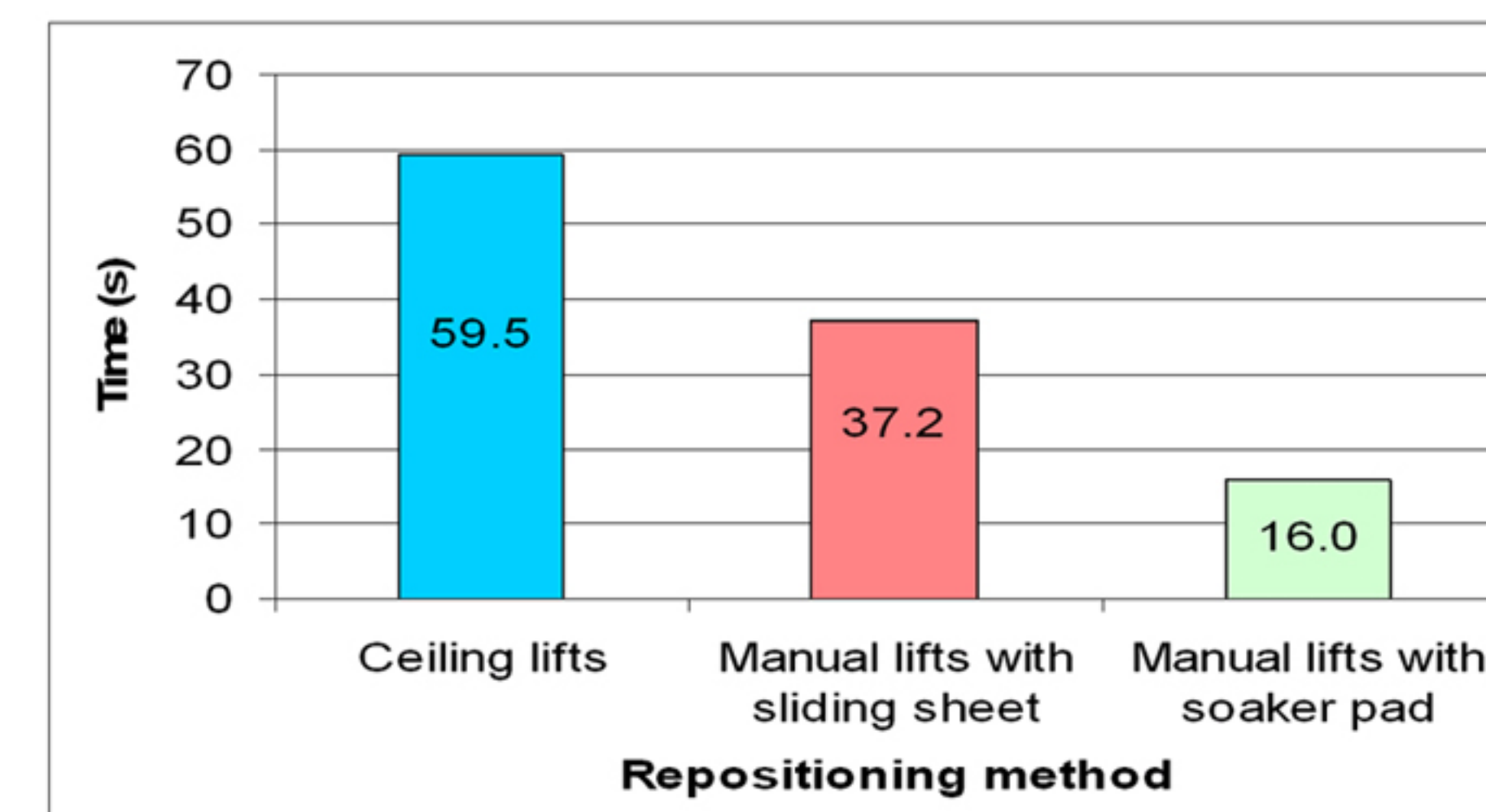
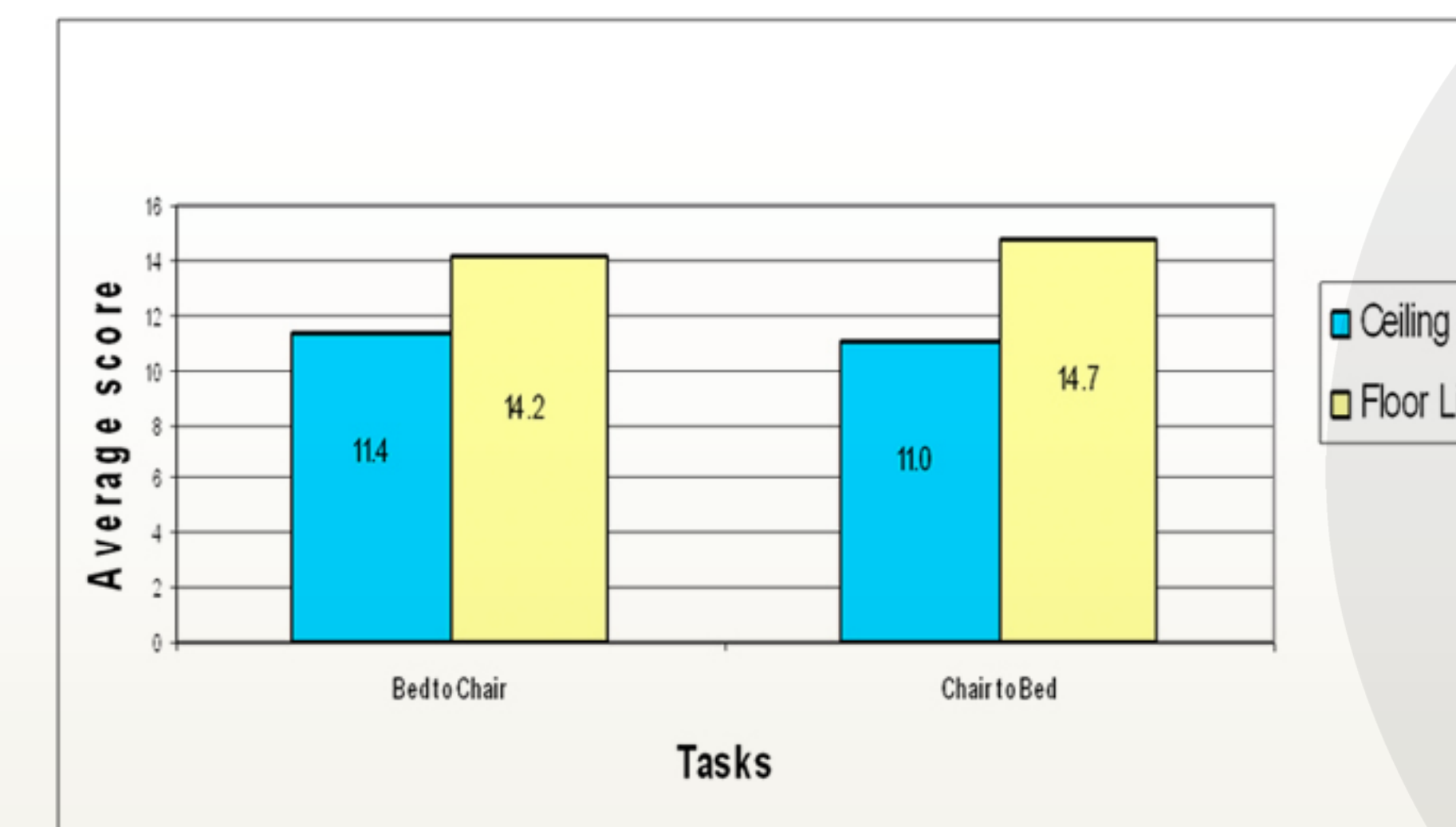


FIGURE 4: Average Comfort Score of Clients Transferred Using Ceiling Lifts vs. Floor Lifts by Task



CONCLUSIONS

Ceiling lifts require less time to transfer residents and were found to be more comfortable for the residents. Overall this study provides support for ceiling lift use and highlights the need for further research on repositioning tasks.



ACKNOWLEDGEMENTS

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