Erector spinae muscle activity during lifted people with two persons in lifting phase of manual human handling (MHH)

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Abstrak

ABSTRACT
The objective of this study was to determine the activity of erector spinae muscle in four techniques of lifting phase of manual human handling; two-handed seat carry, four-handed seat carry, fore-and-aft carry and chair carry. Thirty-two (16 couples) healthy young men lifted subjects weighing 60±5 kg from table heights of 50 cm and 100 cm. Surface electromyography was used to evaluate lumbar erector spinae activity during lifting. The four-handed seat carry technique had the highest average of lumbar erector spinae activity both from table height 50 cm and 100 cm. This may be due to more trunk flexion movement than in other techniques. The lowest activity of lumbar erector spinae was found in fore-and-aft carry and chair carry techniques. Moreover, lifting from table height 50 cm had more lumbar erector spinae muscle activity than lifting from table height 100 cm in 3 techniques (two-handed seat carry, four-handed seat carry and fore-and-aft carry). The highest activity of lumbar erector spinae muscle in the four-handed seat carry technique indicated risk of low back pain during lifting, especially lifting people from a table height of 50 cm. Lower lumbar erector spinae muscle activity in fore-and-aft carry and chair carry techniques indicated safer they are safer techniques for lifting.