A 5-WEEK VISUAL FEEDBACK TRAINING FOR POSTURAL CONTROL IN ELDERLY; SHOULD THE LEARNER’S ATTENTION BE DIRECTED?

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Introduction: Factors that influence older adult learning are instructions and feedback. There are, however, strong individual differences as to the feedback needed to enhance motor learning in the aged [1]. Instructions or feedback that direct the performer’s attention to the effects that her or his movements have on the environment (external focus) have been demonstrated to lead to more effective learning than directing attention to the movements themselves (internal focus) [2,3]. This motor learning research, however, has had little impact on clinical applications. In this study we investigated whether motor learning performance was affected differently by the type of attentional focus as a function of a frail elderly performer exercising postural control.

Methods: Twenty-six elderly subjects (age 81 ± 6 years, 21 females and 5 males) were (re)learning control of bodily orientation during two-legged standing on a moveable platform. All participants were randomised to train and perform test trials under either internal focus (IF; n = 14) or external focus (EF; n = 12) instructions. Both groups followed two guided trainings per week for 5 weeks; each session lasting 20-30 min. Dependent measures (DM) included a weight shift score (stable platform), performance time and dynamic stability index (both unstable tilting platform). All DM were assessed in each session. Data were analysed with a 2 (EF/IF) by 10 (Days) ANOVA, with repeated measures on the last factor. Results: The between groups tests indicated that the variable Instruction failed to reach significance in weight shift F(1,24) = 0.39, p = 0.538; performance time F(1, 19) = 0.11, p = 0.743; and dynamic stability F(1, 19) = 2.133, p = 0.161. The within subject tests indicated that there was a significant time effect for all three parameters: p-values <0.001, 0.002 and <0.001 respectively. In other words, both groups improved similar in task performance within 5 weeks. Discussion/Conclusion: This study indicates that the form of instruction, EF or IF, had no influence on elderly learning control of bodily orientation with visual feedback on a moveable platform. Both groups demonstrated a similar increased proficiency in performance from week 1 to week 5. In elderly learners there is no advantage of EF over IF instructions.


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