Haptic supplementation improves postural control in perturbed upright stance

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Introduction.– Haptic information improve postural stability in static situations [1,2]. The present study aimed to explore their effects on perturbed posture in young and older participants.

Methods.– Thirty-three participants (n = 12 young, 27 ± 2 years; n = 11 older, 75 ± 6 years) have been tested on a moving force platform perturbing by anteroposterior translations (amplitude of perturbations 62 mm, velocity 0.1 m/s) in five experimental conditions (Anova: age condition, P < 0.05). We compared a control condition (REF, perturbation without supplementation) with four conditions with haptic supplementation due to a light grip of an inclined cane touching the ground. The mobility of the cane has been manipulated: fixed cane (FC), mobile handle, blocked extremity (BC), mobile cane on slippery cane touching the ground. The mobility of the cane has been manipulated: fixed cane (FC), mobile handle, blocked extremity (BC), mobile cane on slippery surface (SC) or rough surface (RC). The displacements of the centre of pressure in anteroposterior direction were analyzed: maximal amplitude (MA), correction time after the translation (CT).

Results.– During the perturbation, the MA equaled for both groups. It increased for all participants in all conditions of supplementation (REF: 23 mm, FC: 38 mm, BC: 36 mm, SC: 40 mm, RC: 39 mm). After the perturbation, the CT of older was shorter than of young participants in the condition REF (280 ms vs 610 ms). The TC of young decreased due to HI (REF: 610 ms, FC: 320 ms, BC: 300 ms, SC: 350 ms, RC: 320 ms) but not of older participants (REF: 280 ms, FC: 300 ms, BC: 310 ms, SC: 290 ms, RC: 320 ms).

Discussion.– These results suggested that young and older participants use their body sway to improve the perception of sensory cues. Concerning young participants, after the perturbation, haptic supplementation enabled them to accelerate their postural response. On the contrary, the very short correction time of older participants observed in the condition without supplementation (REF) suggested a difference in postural control strategy associated to an increased rigidity possibly due to an apprehension to fall. These results underline the importance of a multifactorial approach in postural rehabilitation of older adults.

References


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The politics of falls prevention in pole ST Hélier

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Keywords: Fall; Quality; Prevention

Introduction.– The fall of a patient can result in an important and durable functional loss. From extrinsic and intrinsic risk factors described in the recommendations of the HAS in 2005 and an assessment of professional practices, a multidisciplinary team has established in 2007 a predictive score of falling.

Methods.– At each arrival of a patient, the risk of falling is estimated between 0 and 6. From score 3, patients are considered at risk. Assessment score and the list of the precautions are located in a specific form in the computerized patient record. Starting from score 5, the contention is discussed in multidisciplinary team and prescribed. Score is reassessed every week.

Results.– Currently, 84% of fallers had scores between 3 and 6. Since January 2012, a multidisciplinary team meets once a month to analyze declarations of falls. In 2012, 201 falls were reported. Serious consequences were reported for three patients. The quantitative analysis has highlighted a more accurate profile of fallers. Patients with stroke account for 50% of these fallers. In 60% of cases, we note that the fall occurs in the first month of hospitalization. Patients are for 64% wheelchair users. In 70% of falls, the patient is alone.

Conclusion.– Areas of improvement of politics to prevent falls in the year 2013 include the awareness of patients about their risk of falling. Following assessment by the physician at the patient’s admission, preventive measures are implemented to reduce the number of falls.

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Effect of a dance therapy workshop on social participation and integration of adults with motor deficits: An exploratory study

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Keywords: Dance therapy program; Participation

Introduction.– A dance therapy program (DTP) has been offered to clients at the Lucie Bruneau Rehabilitation Centre in Montreal, Canada since 2010. DTP is based on the principal components (body, space, effort and shape) of Laban movement theory (Laban, 2003), and consists of a 1.5 hr session per week over a 12 week period. The goal is to facilitate social integration and participation in adults with motor deficits while improving balance, endurance, and mobility. Until now, the effectiveness of this program has not been formally investigated.

Objective.– to explore the effect of a 12-week DTP workshop on social integration and participation of adults with motor deficits.

Methods.– Design: pre and post analysis. Four outcome measures were used to evaluate the effectiveness of the workshops conducted in 2012-2013:

– flow State Scale (FSS2);
– timed up and go (TUG);
– assessment of life habits (LIFE-H 3.0), and;
– semi-structured exit interview on participant satisfaction with the program.

Results.– At the end of the 12-week sessions, the TUG (n = 16) was significantly improved (P = 0.001), with a decreased time of execution (from 15.6 ± 6.1 ± 6s to 11 ± 6s); concomitantly, the risk for falls in the participants decreased from 100% to 25%. The FSS2 (n = 14) score significantly increased over time.