

J. VERMEULEN, J.C.L. NEYENS, M.D. SPREEUWENBERG, E. VAN ROSSUM, D.J. HEWSON, L.P. DE WITTE. **Validity of a modified bathroom scale measuring balance.** *Gerontechnology* 2012;11(2):263; doi:10.4017/gt.2012.11.02.359.00 **Purpose** The purpose is to investigate the construct validity of a modified bathroom scale that can measure balance in elderly people. **Method** Nursing home patients and active community-dwelling elderly people were included in this cross-sectional study. All participants measured their balance with a modified bathroom scale¹. This balance measurement was compared to the following three clinical balance measurements that were administered by a geriatric physiotherapist: Performance Oriented Mobility Scale (POMA)², Timed Up and Go (TUG)³, and Four Test Balance Scale (FTBS)⁴. An independent samples t-test was performed to determine whether the balance tests discriminated between the nursing home patients and the active community-dwelling elderly people. Correlations were calculated to investigate the relation between the four different balance tests for the two groups of participants separately. **Results & Discussion** A total of 47 nursing home patients with a mean age of 81 (SD 6.40) years and 54 community-dwelling elderly people with a mean age of 76 (SD 5.06) years participated in the study. All four balance tests discriminated between the two groups and showed that nursing home patients had poorer balance compared to community-dwelling elderly people. The correlations between the balance measurement with the modified bathroom scale and the POMA, TUG, and FTBS are presented in table 1 below. The results show that the correlations in the group of nursing home patients were significant. The correlations in the group of community-dwelling elderly people were weaker and not significant. The explanation for this difference is that there was a ceiling effect on the clinical tests in community-dwelling elderly people. The results of this study indicate that the modified bathroom scale could be a useful tool for measuring balance in elderly people, especially in the ones who have poorer balance. Using the bathroom scale to measure balance is much less strenuous for elderly people compared to the clinical tests and they can be done without professional involvement. Another advantage is that elderly people can monitor their own balance. Moreover, the bathroom scale can transfer data via Bluetooth enabling health care professionals to monitor the development of balance in their patients from a distance.

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*Table 1. Correlation matrix of the modified bathroom scale and clinical balance measurements for nursing home patients and community dwelling older adults; POMA=Performance Oriented Mobility Scale; TUG=Timed Up and Go; FTBS= Four Test Balance Scale; *= $p < 0.05$; **= $p < 0.01$*

Clinical measure	Modified bathroom scale	
	Patients	Community dwellers
POMA	0.49**	-0.04
TUG	-0.60*	-0.42
FTBS	0.63*	0.33