1) Objectives: (1) To appraise, by the means of Rasch analysis, the internal validity and reliability of the Coma Recovery Scale-Revised (CRS-R) in a sample of patients with disorder of consciousness (DOC); and (2) to provide information about the comparability of CRS-R scores across persons with DOC across different settings and groups, including different etiologies.

2) Conclusions: The CRS-R is a psychometrically sound and robust measurement tool. The linear measures of ability derived from the CRS-R total scores do satisfy all the principles of scientific measurement and are sufficiently reliable for high stakes assessments, such as the diagnosis of the level of consciousness in individual patients.

3) The Coma Recovery Scale-Revised (CRS-R) was proposed by Giacino et al as a bedside standardized neurobehavioral assessment tool incorporating the current diagnostic criteria for vegetative state (VS), minimally conscious state (MCS), and emergence from the MCS.

4) Data were collected prospectively across 5 different Italian facilities, including 2 rehabilitation wards, 1 intermediate care facility, and 2 nursing homes (NHs), between July 2009 and March 2012. All patients aged 18 to 75 years with a diagnosis of DOC as a result of an acquired etiology admitted to these units were included in this study.

5) Exclusion criteria were preexisting neurologic degenerative pathologies and/or concurrent illnesses (eg, cancer) likely to affect survival within 6 months. Medically unstable patients were also temporarily excluded until their condition had improved sufficiently.

6) Given this limitation, these findings will require replication in the context of a larger multicenter study aimed at confirming the fit to the model and the stability of the raw-score-to-measure conversion tables for the CRS-R.

7) Legal representatives of the incapacitated patients gave their informed consent for enrollment in the study, which was undertaken in compliance with the ethical principles set forth in the Helsinki Declaration.

8) Thus, for the current study, our goal was to fully appraise the internal construct validity (including the invariance of CRS-R totals scores across different etiologies and settings) and reliability of the CRS-R within the framework of Rasch modeling.

9) Conclusions: Balance rehabilitation appeared to be a useful tool in reducing the fall rate and improving balance skills in subjects with multiple sclerosis. Exercises in different sensory contexts may have an impact in improving dynamic balance.

10) In the past decade much attention has been directed towards the rehabilitation of balance in elderly people. Recently the assessment and the treatment of balance and gait impairments in multiple sclerosis have gained more interest within the scientific community.

11) Sensory strategies allow the central nervous system to select and mix the relevant incoming input thus allowing the balance system to adapt its output to a variety of environmental contexts and tasks.

12) The rehabilitation of sensory strategies is an integral part of the rehabilitation program in many published trials. Since demyelination of sensory pathways is a common finding in multiple sclerosis special attention has to be directed to the sensory impairments.

13) The aim of this study was to evaluate the effects of balance retraining in a population of people with multiple sclerosis with two different ways of improving balance, one focused purely on motor retraining and the other on an integrated sensory motor retraining.

14) A subgroup of 50 subjects met the inclusion–exclusion criteria and were enrolled in the study (Figure 1). Four subjects dropped out because they were discharged from the hospital before the end of the protocol and two subjects dropped out for unknown reasons.

15) The whole group consisted of 13 men and 31 women, mean age 46.0 years, standard deviation (SD) 10.2 years. The mean onset of pathology was 13.8 years (8.1 years SD) before the beginning of the study (Table 1). Fifteen subjects used a walking aid in their daily activities.

16) Methods: Using MEDLINE and previous reviews, we searched for prospective studies investigating risk factors for falls among community-dwelling older people. For risk factors investigated by at least 5 studies in a comparable way, we computed pooled odds ratios (ORs) using random-effects models, with a test for heterogeneity.

17) Conclusions: This meta-analysis provides comprehensive evidence-based assessment of risk factors for falls in older people, confirming their multifactorial etiology. Some nonspecific indicators of high baseline risk were also strong predictors of the risk of falling.

18) Factors predictive of falling for community-dwelling older people included history of falling, gait deficit, balance deficit, mobility impairment, fear of falling, visual impairment, cognitive impairment, urinary incontinence, and home hazards.

19) Table 4 shows the effects of psychologic and medical factors. All the medical conditions investigated showed a positive association with both outcomes. The strongest associations were with vertigo, Parkinson disease, and fear of falling: for recurrent fallers the Odds Ratios were 2.3 (1.9–2.8) for vertigo, 2.8 (1.8–4.6) for Parkinson disease, and 2.5 (1.8–3.5) for fear of falling.

20) Several potentially relevant factors were not addressed in this study, either because they were considered by too few studies (eg, anemia, hypovitaminosis D, use of antidepressants, antipsychotics or insulin, footwear, use of bifocal lenses) or because the risk factor was measured in non-comparable ways (eg, muscle weakness, balance impairment, environmental hazards).

21) Kinesiotaping effectively relieved shoulder pain, improved upper limb spasticity and ROM, and reduced shoulder subluxation in stroke survivors. However, the effects of kinesiotaping on upper limb function in terms of Fugl-Meyer Assessement-Upper Extremity scores and independence in activities of daily living were not verified.

22) Treatments to relieve the shoulder pain and reduce spasticity include proper positioning, slings that provide support for the shoulder, acupuncture, functional electrical stimulation, physical therapy, and steroid or Botox injections in the hemiplegic shoulder.

23) Pain in the hemiplegic shoulder restricts upper limb recovery and is the main complaint of stroke patients. Kinesiotaping not only provides mechanical support due to the pressure and stretching exerted by the tape but also accelerates blood circulation and stimulates the nervous system, thus reducing pain.

24) Lindgren and colleagues reported that loss of upper limb function is a predictor of shoulder pain. Patients with pain may refuse active and/or passive training of the hemiplegic shoulder, causing joint stiffness. Moreover, shoulder subluxation and spasms generate a vicious cycle that worsens upper extremity function.

25) Disruption of the integrity of the glenohumeral joint is known as shoulder subluxation and is recognized as a common mechanical contributor to hemiplegic shoulder pain. Displacement of the humeral head may damage the nerves and rotator cuff. Therefore, previous reports indicated that improvement of subluxation directly relieves pain.