Test Theory - CTT) aimed at creating scores with good psychometric properties. In particular, the content validity (the scale measures well the desired concept, with a good understanding of the issues by the patients), the construct validity (dimensionality of the scale), the criterion validity (good correlations with other variables), and the reliability of scores (precision of the score, reproducibility) are studied.

The CTT is an important step in the validation of scales and allows building correct scores for use in medical practice. In clinical research and in epidemiology, however, other qualities of scores can be sought in particular it could be interesting to obtain an interval measure (i.e., a measure which any difference is similarly interpreted at any level of the score: this property justifies the use of averages in groups of patients), and to obtain a measure independent of the items answered by patients (for an efficient handling of missing data, undeniable source of bias when patients respond only partially to the questionnaires). The Item Response Theory (IRT) [1] is a set of models to obtain an interval measure of a subjective concept. In addition, in this theory, the Rasch model [1] provides a measure independent of answered items.

The objective of this presentation is to present the IRT and particularly the Rasch model [1] to theloggists in order to introduce a new IRT model to the field of health (the scale measures well the desired concept, and its utility in research and in clinical practice).

**Reference**


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**CO226-003-e**

**Activity and participation in stroke patients with aphasia: Proposition of an ICF-derived assessment tool**

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Keywords: Aphasia; ICF; Activity; Participation

**Aim.** – The WHO International Classification of Functioning (ICF) seems to be a good theoretical framework to assess aphasic persons’ difficulties in social adjustment and return to community. Our new ICF-derived questionnaire, the G-MAP [1], fits well with this approach, but aphasia impairs the use of verbal questionnaires. This study aimed at knowing which aphasic persons might be assessed with the G-MAP and, within these limits which activity limitation (AL) and participation restriction (PR) were related to aphasia.

**Methods.** – The G-MAP questionnaire includes 24 items related to 6 ICF categories. The items are rated on an ordinal scale during a semi-structured interview with the aphasic person. Thirty-one stroke patients with aphasia (17 men, 14 women, mean age 68.8 years) were assessed over one year after the stroke and compared to 30 matched healthy controls.

**Results.** – Seventeen patients suffered a non-fluent aphasia. No patient with total aphasia (Goodglass and Kaplan’s severity score ASRS 0) was able to be assessed, and 3 others were assessed with difficulty (two ASRS score 1, and one ASRS 2). The assessment was possible with alternative utterances in 16 patients and easy in the 12 last. Significant differences were found between aphasic persons’ scores and controls’ scores in 5 ICF categories, namely PR for Dressing up, Outdoor moving, Shopping, Budget managing, Relationships with unknowns, Group leisure, Community life and Administrative acts. The G-MAP documented also the role of contextual factors. Among them, social support was said satisfying in 79.5% of situations. Others’ attitudes were said 3 to 4 times more often facilitators than barriers. The ICF factor Systems and politics were said facilitator in Personal care, Housing, Community life, but barrier in Relationships and Leisure.

**Discussion.** – The G-MAP may be used in most of aphasic persons, but data from proxy will be of interest. The present study confirms that the ICF is useful to understand aphasic persons’ difficulties and to help them in social adjustment and return to community.

**Reference**


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**CO26-004-e**

**Validation of the posture and gait – Impairments and activities for stroke patients (PG-IASP) scale**

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Keywords: Stroke; hemiplegia; Gait; Balance; Assessment; Scale; Spasticity

**Objective.** – Stroke often leads to posture and gait disturbances, whose evaluation generally separates impairments and activity limitations and do not address ecological aspects and patient’s point of view.

**Patients and methods.** – The PG-IASP scale includes 30 items that assess the patient’s (questionnaire, Q) and the examiner’s (test, T) evaluation of main impairments and activities limitations. The aims of this pilot study were to begin the validation process (reliability, construct validity, internal consistency, predictive validity and feasibility) and to compare evaluations of patients and examiners.

**Results.** – Thirty-five stroke patients with wide functional levels were included (Barthel Index = 71.4 ± 19.7). Feasibility was good, mean time required was 25 ± 6 min for Q and T. Intrarater reliability ranged from good to excellent (ICC > 0.82), interrater reliability was more moderate (0.67 < ICC < 0.9). The scale showed excellent construct validity against neuromotor and spasticity (motor weakness and spasticity; P < 10⁻³), postural capacities (PASS; P < 10⁻⁴), severity of gait impairments (GAIT scale; P < 10⁻³), gait capacities (NFACT, 10-meter walk test, RMI; P < 0.01) and functional level (BI; P < 10⁻³). In addition, internal consistency (α-Cronbach > 0.84) and predictive validity were excellent. Finally, evaluations of patients and examiners were highly correlated (P < 10⁻⁶).

**Discussion.** – The PG-IASP has good psychometric properties. It represents an innovative tool that could be of interest in integrative evaluation of posture and gait disturbances after stroke.

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**Creation and validation of a communication test for awakening from coma**

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Keywords: Communication; Awakening from coma; Rehabilitation; Stroke; Head trauma

**Objectives.** – The awakening from coma is a delicate phase of recovery after brain lesion. The presence of a minimal communication is a key sign of awakening. Many scales assess the severity of the vigilance disorder, which often include items related to communication. However, no one is specifically dedicated to this problem. Our aim was to create and validate one such scale.

**Patients and methods.** – The test had to successively evaluate (1) identified factors that may contribute to communication disorders (such as mobility impairments, cognitive or psychological difficulties), (2) the communication
Fulfilment of patients’ and surgeons’ expectations in total hip arthroplasty

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Keywords: Total hip arthroplasty; Expectations; Arthroplasty expectations; Patients’ expectations; Surgeons’ expectations; Fulfilment of expectations; Satisfaction

Introduction.– The relationship between patients’ expectations and satisfaction in total hip arthroplasty (THA) remains unclear, and the role of surgeons’ expectations is unknown. This study aimed to assess factors associated with satisfaction and expectations fulfilment after THA, and to describe in which domain patients’ and surgeons’ expectations were fulfilled.

Methods.– Preoperatively, 132 patients on waiting list for THA in three tertiary care centres and their surgeons had been interviewed to assess their expectations using the Hospital for Special Surgery Total Hip Replacement Expectations Survey (THR survey) [1]. One year after surgery, 123 patients were contacted by phone to complete a questionnaire on their expectations’ fulfilment (THR survey), satisfaction, functional outcome (Womac), and quality of life (SF 12). Univariate and multivariate analyses were performed to assess determinants of satisfaction and expectations’ fulfilment.

Results.– Surgeons’ expectations were more realistic than patients’ for relieving night pain and removing the need of a stick. Patients and surgeons had too optimistic expectations regarding cutting toenails, putting on shoes, improving sport, sexual and professional activity. In the group of patients who were satisfied (n = 113), preoperative mental well-being was higher and surgeons’ expectations were more optimistic. Expectations’ fulfilment was the only independent determinant of satisfaction (adjusted OR 1.08, 95% Confidence Interval [CI] 1.04; 1.12, P < 0.001). Expectations’ fulfilment could be predicted before surgery by a younger age (regression coefficient −0.55 [95% CI −0.88; −0.21], P = 0.002), a better mental well-being (0.56 [95% CI 0.14; 0.99], P = 0.03) and a lower disability (−0.96 [95% CI −1.82; −0.1], P < 0.001). After surgery, functional outcome was its main determinant (−2.10 [95% CI −2.79; −1.42], P < 0.001).

Conclusion.– The fulfilment of patients’ expectations, independently of their preoperative level, determines satisfaction after THA. It could be predicted before surgery by a younger age, a better mental wellbeing and a lower disability. Surgeons have reliable expectations of postoperative satisfaction, and could improve information of patients on expected outcomes.

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Reintegration to Normal Living Index in a population of community-dwelling people with slowly muscular diseases


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Keywords: Questionnaire; Scale; Validity; Reproducibility; Muscular dystrophies; Neuromuscular diseases

Introduction.– Reintegration to normal life index (RNLI) is a generic scale and assesses the degree to which the patient has been able to return to a normal life. This questionnaire has not been used, validated and interpreted for a sample of people with slowly genetic muscular diseases.

Patients and methods.– Prospective study with consecutive inclusions of patients with neuromuscular diseases in referral centers of Reims, Dijon and Besançon between April 2004 and June 2011. Patients included were age 18 years or more. Administration of five times RNLI D0, D15 for 2/3 of them, one year, three years and five years. The analysis of socio-demographic data, scores of scales and statistical tests are calculated by SPSS 21 software.

Results.– Hundred and twenty-four patients were included, 75 men (60.5%). The average age was 36.3 ± 11.2 (minimum 18, maximum 60). The Barthel Index is an average of 77 ± 28 (min 10, max 100). It is counted myotonic patients (n = 50), dystrophinopathies (n = 32 including 8 Duchenne), FSHD (n = 18), ASI (n = 8), LGMD (n = 12), congenital muscular dystrophies (n = 3), oculopharyngeal dystrophy (n = 1). Hundred and two patients have no missing data RNLI at the initial time with an average score of 70 ± 20 (min 7 and max