

# The use of patient-reported outcome measures during the day and in the evening to capture therapy dose dimensions in the active upper limb rehabilitation in subacute cervical spinal cord injury

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**BACKGROUND**

Therapists emphasize the need for individualized therapy dosing in arm-hand rehabilitation for people with cervical spinal cord injuries (PwC-SCI) to enhance functional outcomes, but they lack the tools to capture the perceived therapy dose. Patient-reported outcome measures after therapy sessions, as well as in the evening, might support therapists in evaluating individual therapy load.

**OBJECTIVE**

Investigate the association between the perceived therapy dose during the therapy session and in the evening, as reported by the patient.

Investigate the association between the difficulty of the session and the general and physical fatigue, as reported by the patient.

**METHOD**


Longitudinal observational study in 3 rehabilitation centers: Adelante zorggroep (the Netherlands), UZ Leuven and UZ Gent (Belgium).

- Self-reported questionnaires 3 days a week during 3 weeks, interspaced by 8 weeks
- Inclusion of PwC-SCI; 4-8 weeks post-injury at start study, lesions between C1-Th1 and AIS scores between A-D

- Mean scores were calculated for each self-reported question across therapy sessions thought the day
- Associations were calculated by Spearman’s Rho

**BEFORE**

- How fatigued are you in general?
- How physically fatigued are you?
- What is your pain level at the moment?



**AFTER**

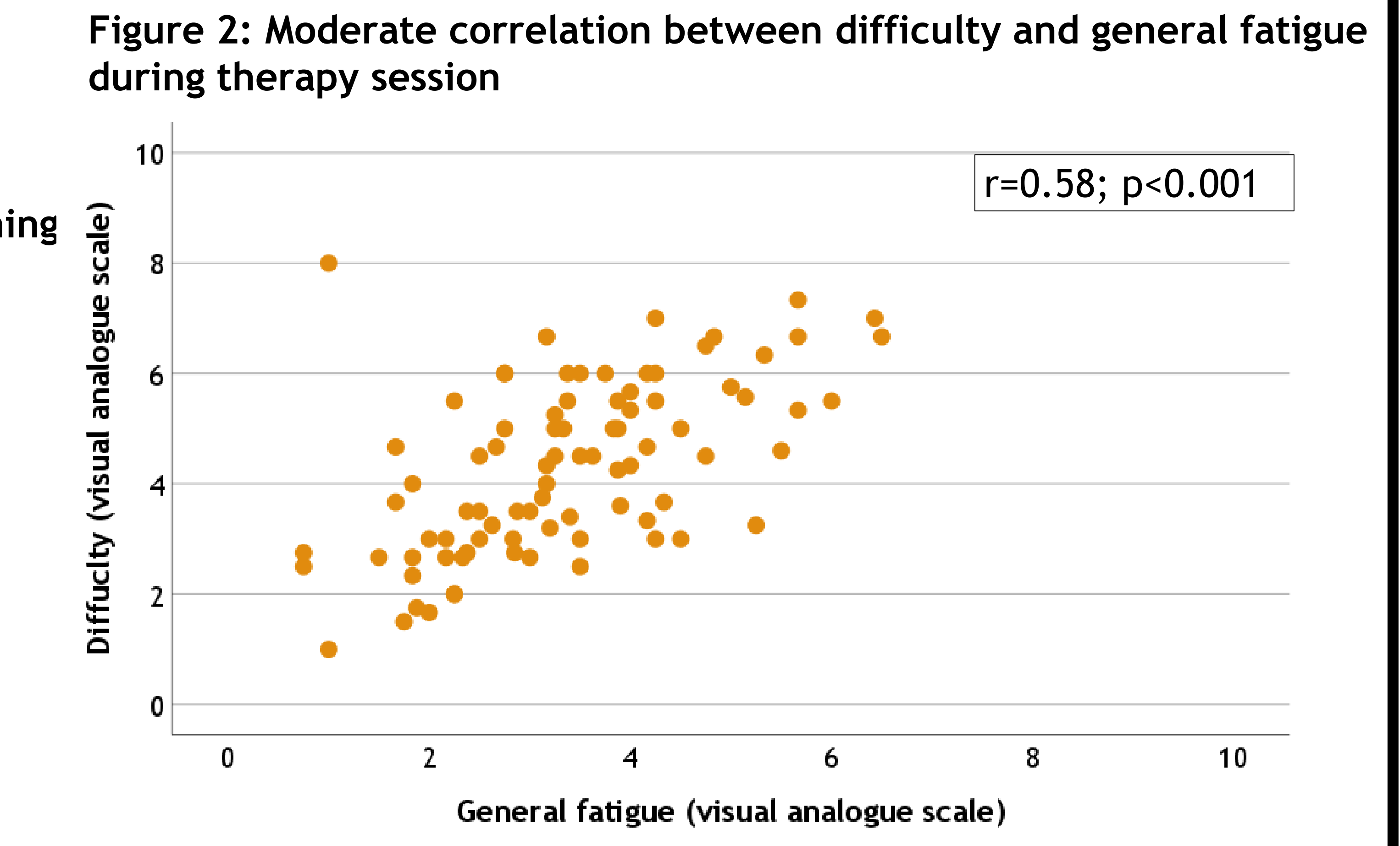
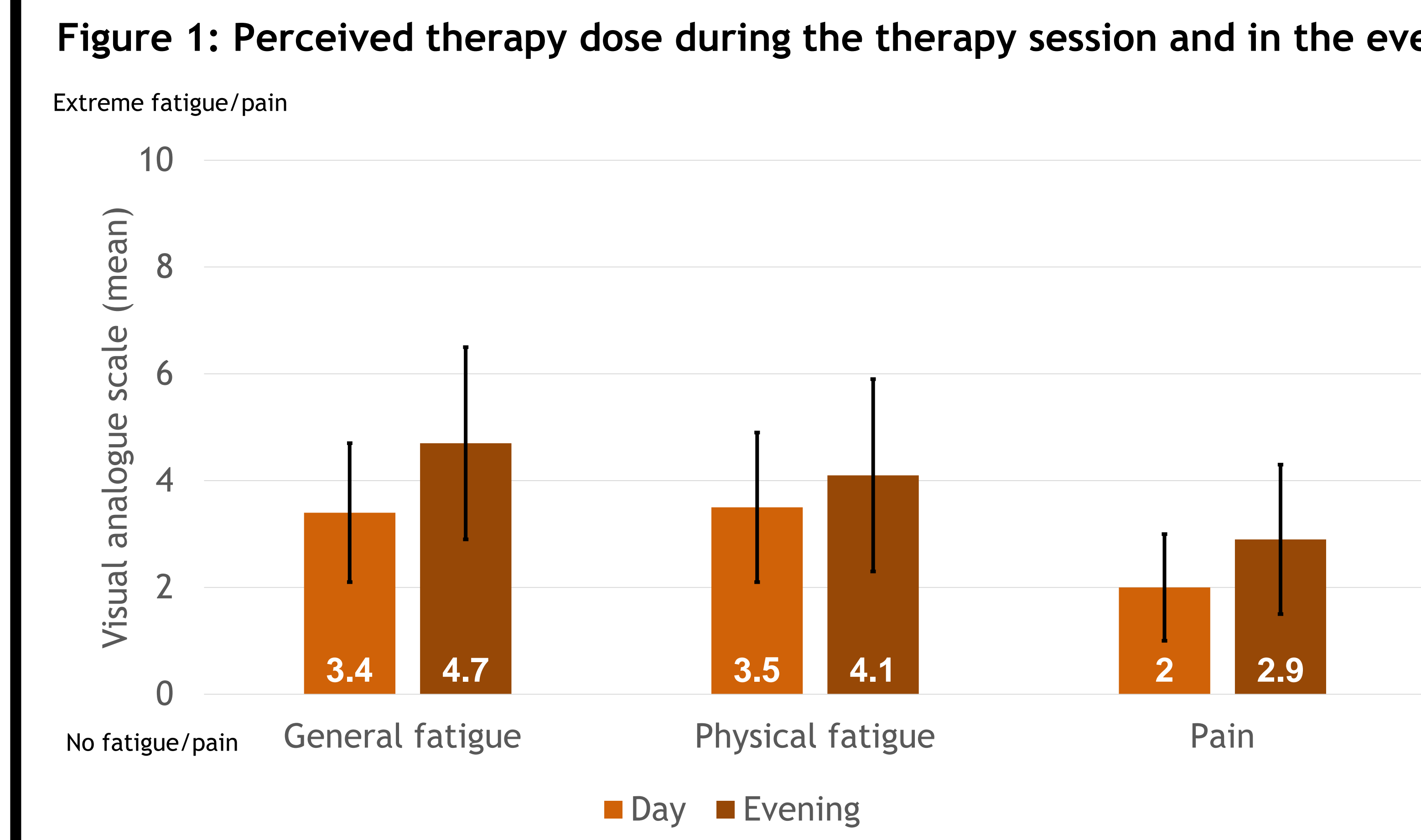
- How fatigued are you in general?
- How physically fatigued are you?
- What is your pain level at the moment?
- How difficult was the session for you?

**EVENING**

- How was your energy level today?
- How was your physical fatigue today?
- How was your pain today?

**RESULTS**

- 13 participants
- Age (mean ± SD): 54.4 ± 12.9
- AIS B-D
- Post-injury in weeks (mean ± SD): 6.7 ± 1.8
- Lesions C1-C5
- 85 questionnaires



**Table 1: Association between the perceived therapy dose during the therapy session and in the evening**

	General fatigue	Physical fatigue	Pain
Day – Evening	r = 0.51*	r = 0.65*	r = 0.44*

\* Significant at p<0.001

Daytime general and physical fatigue scores show a significant moderate correlation with the evening scores. Daytime pain scores show a significant but low correlation with evening scores.

**CONCLUSION**

The moderate association between general and physical fatigue during the day and evening might indicate that end-of-day questionnaires can be used to estimate the dose dimension 'perceived general and physical fatigue' in general. As the correlation between pain after the session and in the evening is low, it is advised to ask about pain during the day. The perceived difficulty of a session is linked with the perceived general and physical fatigue during the day.

