



Focusing on Function: A New Index to Quantify Functional Status in Chronic Pain

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Introduction

- Functional restoration is a primary goal** in treating chronic pain, but pain scores are often the main metric used for success.¹
- The Tennessee Functional Status Questionnaire (TFSQ) was developed to capture multiple dimensions of a patient's function (Figure 1).²
- However, it lacked a composite score to easily track a patient's progress over time. This study's purpose was to create a composite TFSQ Index and assess its correlation with the Roland Morris Disability Questionnaire (RDQ), a validated tool for measuring function in patients with low back and leg pain.
- For the RDQ, higher scores correspond to greater levels of disability and decreased function.³ Given that higher scores on the TFSQ Index represent better function, we hypothesized that the TFSQ Index would demonstrate a significant inverse correlation with the RDQ.

Methods

- This prospective observational study (IRB #5218) enrolled 148 patients with low back and leg pain at an academic outpatient clinic.
- Participants completed both the Tennessee Functional Status Questionnaire (TFSQ) and the Roland Morris Disability Questionnaire (RDQ)
- A composite TFSQ Index score (ranging from 1-13) was created by summing METs for functional performance and capacity and then adding indicators for functional change, pain, and acute care utilization.
- The primary outcome was the correlation between the TFSQ Index and RDQ scores. A Spearman correlation was used for analysis because the TFSQ data was not normally distributed.

TFSQ Index

Please use the table below to answer Questions 1 and 2: |

A	B	C	D	E
- Self-Care – shower/wash, dress, use bathroom, Eat - Shop at store, make food - Walk around house - Sit at computer - Ride mower, water grass	- Activities in Column A, and at least one activity below: - Child care – lift a child - Sweep/Vacuum/Clean inside house - Walk the Dog/ Walk on flat firm surface - Trim shrubs or trees, use leaf blower	- Activities in Column B, and at least one activity below: - Elder care, care for disabled adult - Sweep outside house, sidewalk, or garage. - Push a wheelchair/ Walk fast while holding less than 25 lbs. - Push a power mower, Rake lawn, Play Golf (walk and pull clubs)	- Activities in column C and at least one activity below: - Walk/run - play with children - vigorous only active periods - Carry 1-15lb load upstairs; - Walk fast on a flat surface (4mph) (walk a mile in 15 minutes) - Softball or baseball; Tennis, doubles; Health club/gym work out	- Activities in column D and at least one activity below: - Move Furniture, household items, carry boxes - Walk 3.5mph (very fast) up hill - Jog, singles tennis, basketball game, hard work out (high impact aerobics)

- Choose the column that best matches what you **usually** do in a day (your usual activity level) (circle one)
Column: A B C D E
- Choose the column that best matches what you **can** do on your **best** day (circle one)
Column: A B C D E
- In the last 60 days, has your **usual** activity level **changed**? (circle one)
 - I am now **more** active than I was 60 days ago.
 - I am now **less** active than I was 60 days ago.
 - My activity level is the **same** as it was 60 days ago.
- In the last 60 days, have you had **pain** that affects your activity level?
 - Yes
 - No
- In the last 60 days, have you gone to the **emergency room** (ER)/**hospital** or had a **surgery**?
 - Yes
 - No

TFSQ Scoring

Question Number (1-5)	Score (1-13 total possible score)
TFSQ 1 (2-6 possible points)	A=2 points B=3 points C=4 points D=5 points E=6 points
TFSQ 2 (2-6 possible points)	A=2 points B=3 points C=4 points D=5 points E=6 points
TFSQ 3 (+1, -1 or 0 possible points)	a= +1 points b= -1 points c= 0 points
TFSQ 4 (-1 or 0 possible points)	a= -1 points b= 0 points
TFSQ 5 (-1 or 0 possible points)	a= -1 points b= 0 points

References

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- Roland M, Fairbank J. The Roland–Morris Disability Questionnaire and the Oswestry Disability Questionnaire. *Spine.* 2000;25(24):3115-3124. doi:10.1097/00007632-200012150-00006

Results

- Participants:** Data was collected on n=148 individuals. The median age was 65 years (IQR 55-75), and 61.6% were female. The median BMI was 30.3 (IQR 26.6-35.1).
- Diagnoses:** The most frequent primary diagnoses were Lumbar disc disease with radiculopathy (M51.16, n=40, 21.7%) and lumbar radiculopathy (M54.16, n=31, 16.8%).
- Questionnaire Scores:** The median score for the TFSQ Index was 4 (IQR 3-6). The median score for the RDQ was 14 (IQR 10-17) at the initial evaluation.
- Primary Outcome:** A statistically significant, moderate, negative correlation was found between the TFSQ Index and the RDQ score (Spearman’s rho = -0.44, p < 0.001, 95% CI [-0.56, -0.29]).

Discussion

- This study successfully developed the TFSQ Index, which showed a moderate, inverse correlation with the RDQ in patients with low back and leg pain. This indicates that as a patient's functional status improves, their self-reported disability decreases.
- The TFSQ Index offers an efficient yet comprehensive snapshot of a patient's functional status. It helps clinicians identify specific, actionable factors that can be addressed in a patient's treatment plan.
- The index shows significant promise for future applications, including tracking functional outcomes over time, use in clinical research, and as a key outcome measure for diverse chronic pain populations.