Not Only Biased by Mental State: What Patients Tell Us Via PROMs Only Represent Up to 33% of Their Functional Status

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INTRODUCTION: This study investigates the relationship between patients' demographics, radiographic sagittal alignment, and PROMs in their ability to predict patients' true functional status objectively assessed by DFT. We hypothesize that the Dubousset Functional Test (DFT) is a valid proxy for patients' age, radiographic malalignment, and PROMs.

METHODS: This is a prospective, single center study including primary patients who presented for evaluation of lumbar degenerative disease and spinal deformity. DFT is a test which assesses 4 domains: Up and Walking Test (UWT), Steps Test (ST), Down and Sitting Test (DST), Dual Tasking Test (DTT) (Figure). Each test was timed, and performance was scored in seconds required to finish the test. Demographics, past medical history, spinopelvic radiographs, and PROMs (EQ5D, ODI) were collected. Patients with a history of depression or anxiety were compared to those without in terms of spinopelvic alignment, PROMs, and DFT performance. Regression models were built to predict DFT domain performances using age, BMI, radiographic parameters, and PROMs.

RESULTS: 55 patients were included (52 years, 66% female, BMI 25.6). 24% of patients had history of depression/anxiety. Those patients had significantly worse ODI (44 vs. 29), and EQ5D (0.5 vs. 0.71) with similar radiographic parameters (PT, PI-LL). Time to perform DFT was comparable between the groups in all 4 tests. Regression models revealed that the ODI predicts all 4 DFT domains (r2 ranged from 0.013, p=0.458 for DTT to 0.331 for DST, p<0.005). Adding age to the model improved r2 to range from 0.186 to 0.387; and adding PT, PI-LL, SVA improved the model to (r2 range 0.529 - 0.720), all p<0.05. Similar findings were observed for EQ5D, however with lower r2 range (0.007 for DTT, p<0.005 – 0.144 for DST, p=0.008). Finally, adding BMI had a significant effect on predicting DFT tests (r2 0.676 – 0.891).

DISCUSSION AND CONCLUSION: PROMs can partially explain patients' functional status. This data showed that patients with anxiety/depression had similar performance on objective functional tests. DFT performance was accounted by the combination of PROMs, radiographic parameters, and patients' demographics.

The **Dubousset Functional Test** consists of the following four components: (1) **UWT (Up-and-Walking Test)**: unassisted sit-to-stand, walk forward/backward 5m (no turn), unassisted sit; (2) **ST (Steps Test)**: ascend 3 steps, turn, descend 3 steps; **(3) DST (Down-and-Sitting Test)**: stand-to-ground, sit-to-stand, assistance as needed; **(4) DTT (Dual-Tasking Test)**: walk 5m forth and back while counting down from 50 by 2.