

Improvement in Understanding Spinal Deformity and Associated Disability in Rehabilitation Based Training Programs

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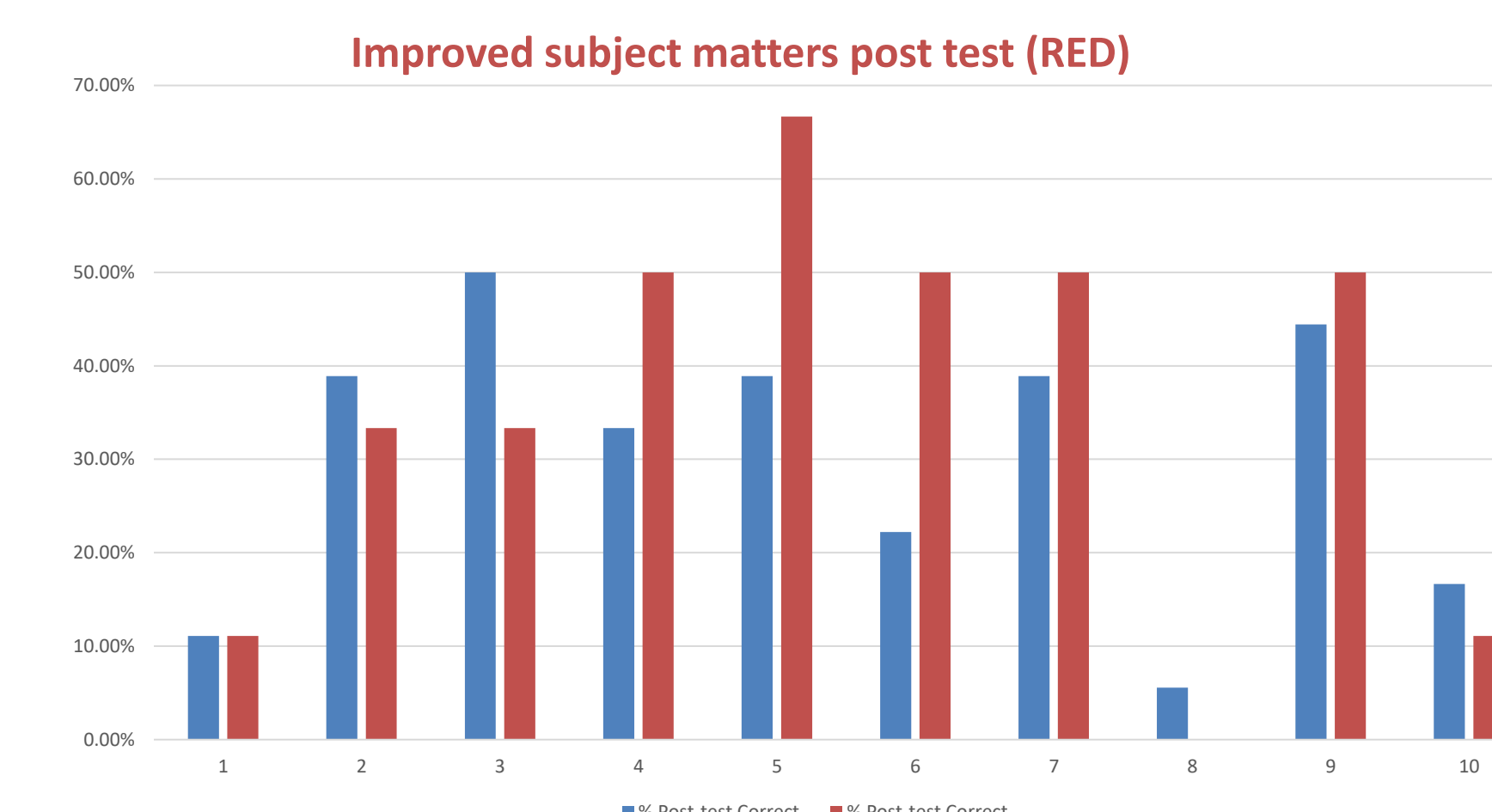
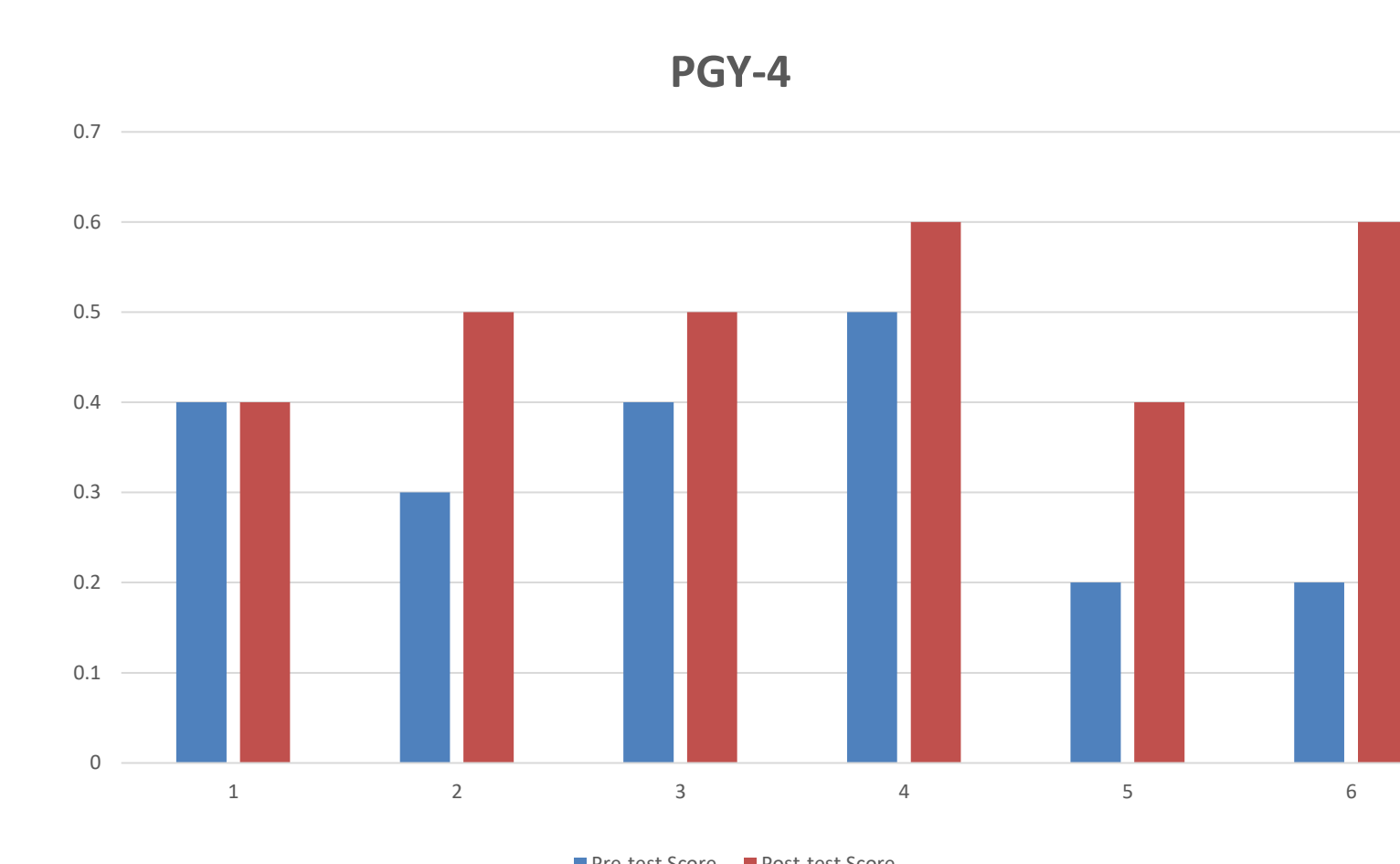
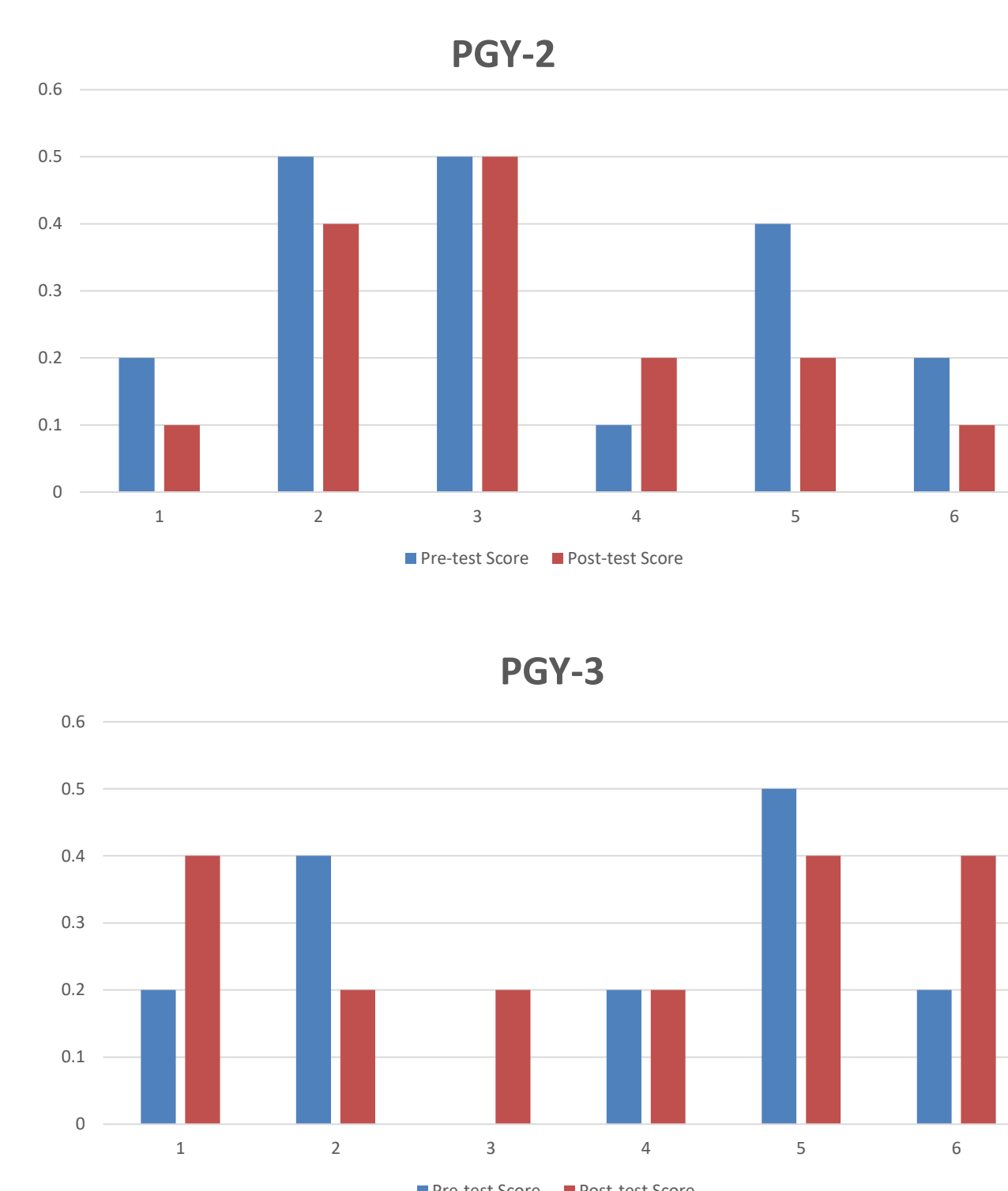
Abstract

- Spinal deformity encompasses a myriad of conditions that may result in significant physical disability
- Understanding, diagnosing, monitoring, and treatment of these conditions do not constitute a current focus of rehabilitation-based residency or fellowship spine programs
- Background: There is one spine deformity lecture every other year for our residency program, usually given by a spine surgeon. There is no specific curriculum in spine fellowship programs and rehabilitation residency programs to teach and assess for knowledge of spinal deformity disorders and disability associated with it

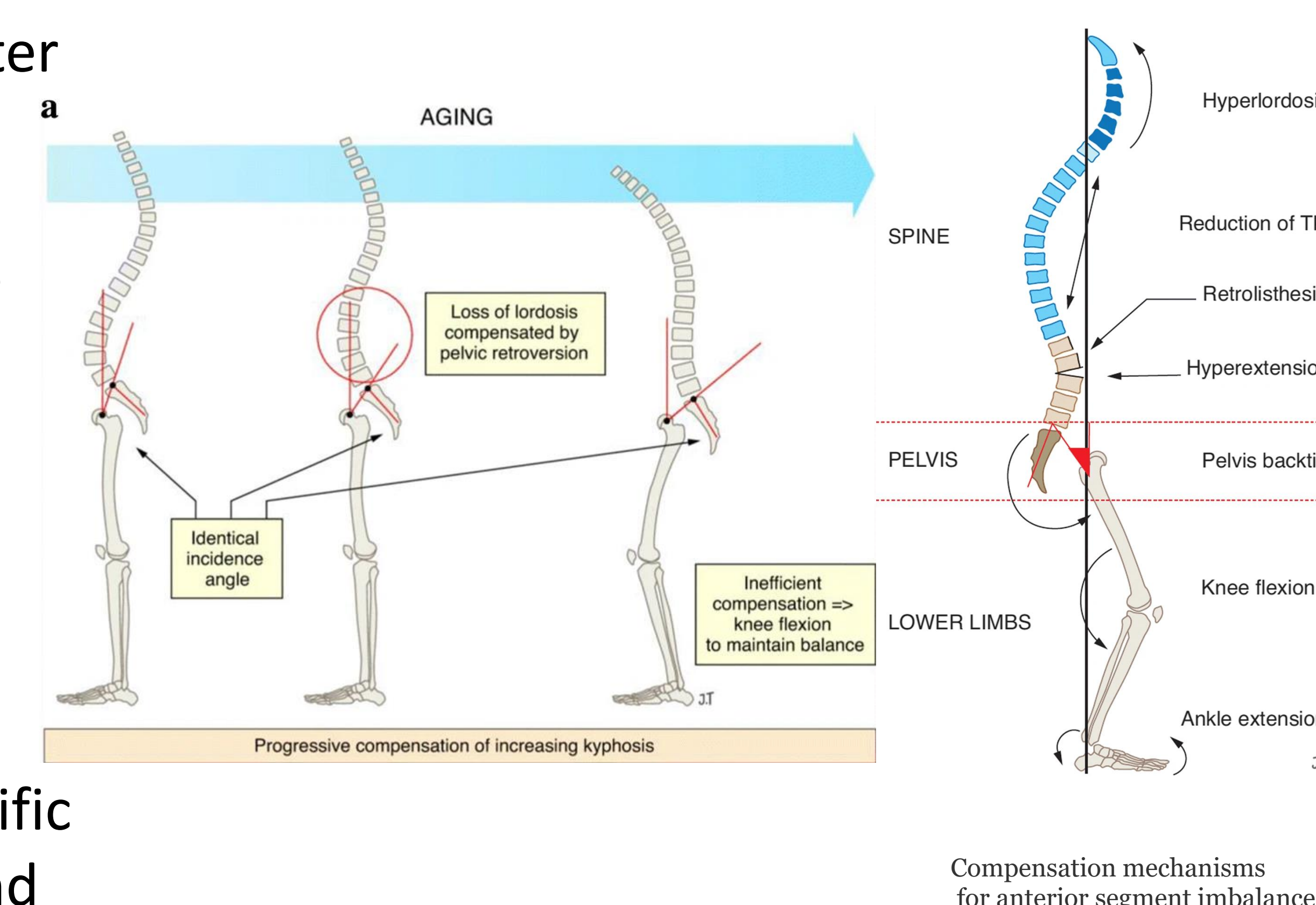
Design

- Assessing the depth of knowledge for spinal deformity of Physiatry residents in a large quaternary academic medical center at baseline and after teaching interventions, at 6 weeks after the initial evaluation/test. No trainee had access to results after the first test. They had no access to the test questions in between the evaluations
- The assessment was performed in an anonymous way allowing each resident to assign a four-letter number to herself/himself and the PGY year. There were total of 18 residents who received the initial evaluation and 17 residents who received the evaluation after the educational materials were given.
- The most used measures for spinal deformity and sagittal imbalance of the spine were tested during didactic sessions. The subject matters were selected in collaboration with the Chief of Spinal Deformity Surgeon of the institution (internal mentor)

Results



- All the PGY-4 residents improved their knowledge after the didactic material was presented (p=0.0305)
- With one exception, in each of the PGY-2 and PGY-3 years, the residents did not improve their knowledge on spinal deformity
- The concepts in evaluation of spine included: global balance, pelvic tilt, pelvic incidence, line of gravity, sacral slope, relationship between spinal angles, degenerative scoliosis progression, concepts of thoracic kyphosis, lumbar lordosis measurements, compensatory mechanisms for sagittal imbalance, specific measurements and equations for sagittal imbalance, and gold standard of imaging for sagittal imbalance



Implications & Limitations

Implications:

- There was a clear improvement in knowledge on spinal deformity assessment for PGY-4 year
- There was improvement in understanding the concepts of: progression of degenerative scoliosis, specific measurements and equations for sagittal imbalance, and gold standard of imaging for sagittal imbalance
- There is a clear need for a spinal deformity curriculum in PMR residency and fellowship programs with focus on evaluation, diagnosis, management and counseling on natural history, progression and surgical options as well as limitations.

Limitations:

- The survey given had no implications for the trainee in order to stimulate reading/interest
- There was one trainee that was not present for the initial test session
- There is limited exposure to spinal deformity and evaluation in PMR curriculum for residents
- There are variables that can influence the data like: trainee behavior on subspecialty subject matters, limited faculty interest in spinal deformity, faculty and trainee access to multidisciplinary spinal rounds/didactics