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THE SCRIPT CONCORDANCE TEST IN PAEDIATRIC RHEUMATOLOGY (SCT-PR): A NOVEL TOOL TO ASSESS CLINICAL REASONING COMPETENCE

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Background ACGME competency based outcome standards mandate use of multiple assessment methods to evaluate resident progress. Currently, there are no validated tools to evaluate clinical reasoning in paediatric rheumatology.

Objective To describe the development of the first clinical reasoning tool in paediatric rheumatology for residents based on script concordance methodology.

Design Content domain of the SCT-PR is developed from congruent curricular concepts from two sources (Academic Pediatric Association, a UCSF survey). SCT-PR test items are rated by 9 paediatric rheumatologists for content validity using Lawshe's methodology. SCT-PR test items with a validity ratio of 0.62 are assessed for face validity, generating a blueprint of 20 clinical vignettes with 60 selected SCT-PR test items. The SCT-PR construct is administered to 6 paediatric rheumatologists to generate a scoring grid to interpret the SCT-PR test scores of 25 paediatric residents at Lucile Packard Children's Hospital. Data analyses includes univariate descriptive statistics of SCT-PR test scores, reliability assessment (Cronbach alpha) and test item discrimination.

Results See tables 1 and 2.

The SCT-PR demonstrates moderate difficulty ($P=66\%$) of test items and good internal reliability ($\alpha = 0.79$). The

mean discrimination index of the 60 test item SCT-PR is 0.29 with a value range between -0.42 and 0.73 . There are 22 items with a discrimination index below 0.20. Test items with a low discrimination index had a mean difficulty measure of 0.78 in comparison to the mean difficulty level of 0.60 of test items with good discrimination.

Conclusions The SCT-PR has the potential to be an effective assessment and teaching application in medical clinical reasoning for paediatric residents.

Table 1 Blueprint of SCT-PR items

Diagnosis	Task assessed (number of test items)
Autoimmune hepatitis	D (1)
Benign musculoskeletal pain	D (2)
Coeliac disease	D (1)
Henoch–Schonlein purpura and mimics	I (1)
Inflammatory bowel disease	D (1)
Juvenile dermatomyositis	D (1)I (3)
Kawasaki disease and mimics	D (2), T (1)
Lyme arthritis	D (1), I (1)
Malignancy	I (2)
Oligoarticular JIA	D (3), I (3)
Pain	I (3)
Patellar femoral syndrome	D (1)
Periodic fevers	D (2), I (2), T (1)
Polyarticular JIA	I (3)
Post-strep autoimmune syndrome	D (1), I (4), T (2)
Raynaud's syndrome	D (3)
Reactive arthritis and mimics	D (1)
Scleroderma	D (1)
SLE and its complications	D (6), T (3)
Spondyloarthropathy and mimics	D (1), I (4), T (1)
Systemic JIA and mimics	D (3), T (1)
Vasculitis	D (2), T (1)

D, diagnosis; I, investigation; T, treatment.

An SCT-PR test item may test more than one diagnosis.

Table 2 Sample of a clinical vignette with script test items

Jake is 10 year old avid soccer player. He is complaining of right knee 'stiffness and swelling' for seven weeks.

		−2	−1	0	1	2
If you suspect the diagnosis of	And then you find the patient					
Oligoarticular JIA	Underwent arthroscopic debridement at onset of symptoms for presumed septic arthritis					
Oligoarticular JIA	Was treated 2 months ago with amoxicillin for a positive strep throat culture					
Oligoarticular JIA	Has a positive apprehension sign and crepitus involving the right knee					

Key: −2, highly improbable; −1, less probable; 0, unaffected; 1, probable; 2, highly probable.