

SHARP

A NEW ITEM FORMAT TO ASSESS CLINICAL REASONING

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Mid 2020: NBME Clinical Reasoning program of research established

Mid 2021: Develop a question format that captures evidence of a student's clinical reasoning process

- **Diagnostic justification**
- **Appropriate for high-stakes decisions**
- **Administered alongside Multiple-Choice Questions (MCQs)**

SHARP: Short Answer, Rationale Provision

Patient Information

Age: 32 years old
Gender: M, self-identified
Ethnicity: unspecified
Site of Care: office

History

Reason for Visit / Chief Complaint: “My right heel hurts”

History of Present Illness

- 3-week history of severe right heel pain
- pain worsens in the morning and after prolonged sitting
- pain is less severe after he completes 1 mile of running
- has not had redness, warmth, or swelling
- had had no history of recent trauma
- has not had pain in other joints or other areas

Past Medical History

- no serious illnesses

Medications

- acetaminophen prn for heel pain

Vaccinations

- received HPV vaccine 5 months ago

Allergies

- no known drug allergies

Family History

- mother: alive with type 2 diabetes mellitus
- father: alive with hypertension

Psychosocial History

- avid runner
- does not smoke cigarettes, drink alcoholic beverages, or use other substances

Physical Examination

| Temp | Pulse | Resp | BP | O ₂ Sat | Ht | Wt | BMI |
|------------------|--------|--------|--------------|--------------------|-----------------------|-------------------|----------------------|
| 37°C (98.6°F) | 65/min | 16/min | 120/75 mm Hg | 98% on RA | 175 cm (5 ft 9 in) | 70 kg (155 lb) | 23 kg/m ² |

- **Appearance:** well developed; no apparent distress
- **Skin:** warm; well perfused
- **HEENT:** clear oropharynx; no scleral injection or icterus
- **Pulmonary:** clear to auscultation
- **Cardiac:** regular rate and rhythm; no murmurs, rubs, or gallops
- **Abdominal:** soft; nontender; normal bowel sounds
- **Genitourinary:** testis descended; meatus clear with no discharge or erythema
- **Musculoskeletal:** mild tenderness to deep palpation of the right medial heel
- **Neurological:** fully oriented without focal motor or sensory deficits; muscle strength 5/5 on dorsiflexion and plantar flexion

What is the most likely diagnosis?

plantar fasciitis

You indicated that plantar fasciitis was the most likely diagnosis.

Choose up to 5 pieces of information on the patient chart that best support plantar fasciitis as the most likely diagnosis. You select the information by clicking / tapping on the information. You de-select information the same way. When you are satisfied with your response, please proceed to the next page.

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PROOF-OF-CONCEPT STUDY (EARLY 2022)



177 students from ~20 schools

35 items

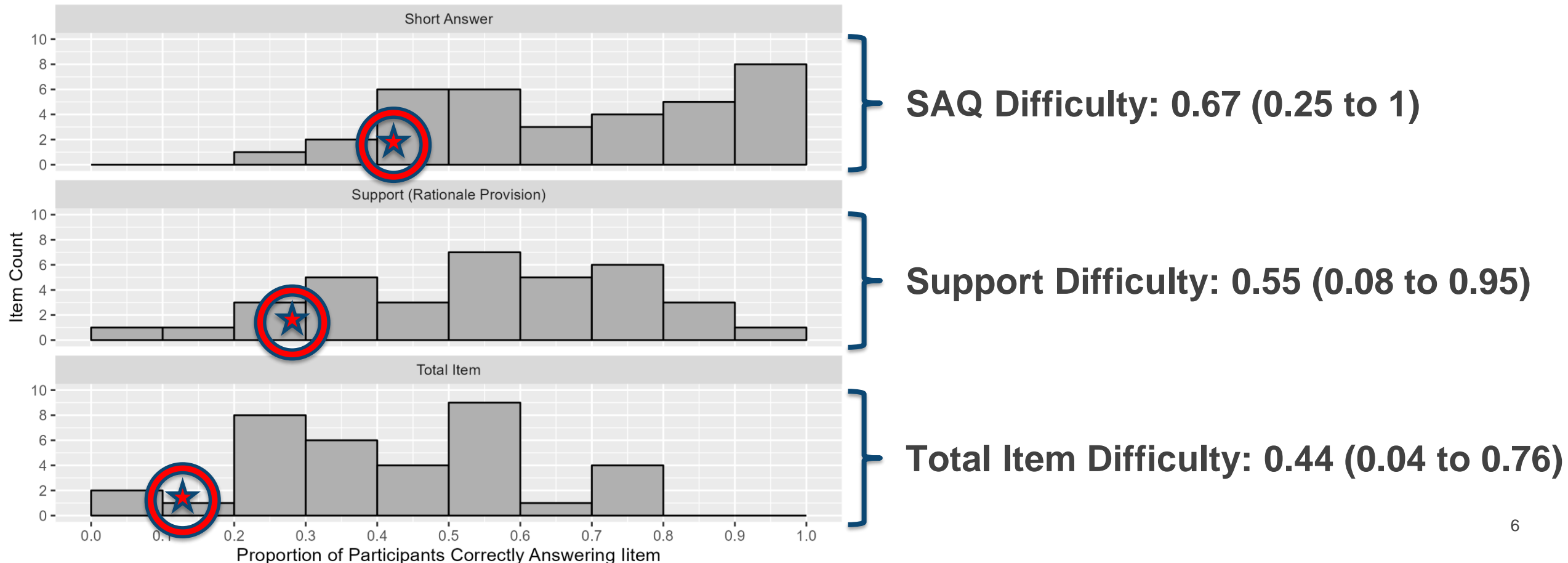
Did not collect any demographic or identifying information

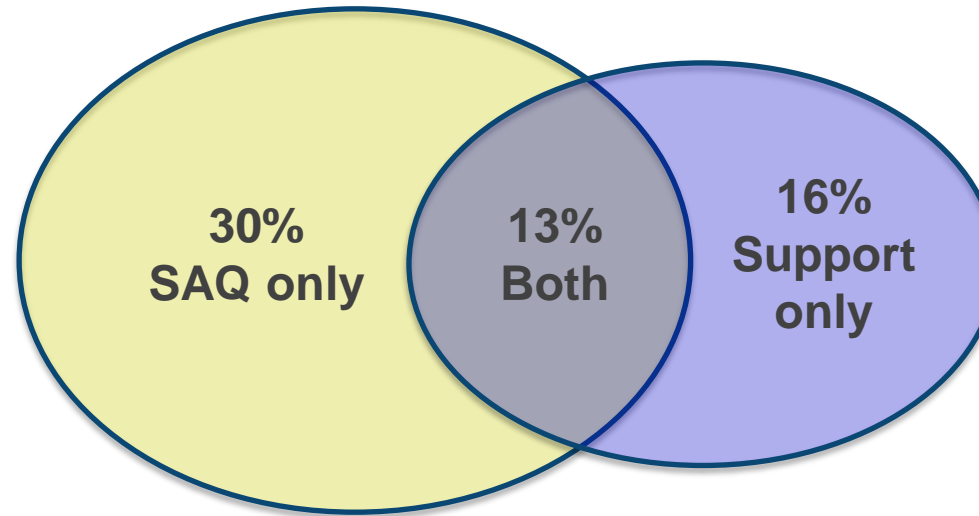
RESULTS

Response time: 135 seconds (1.5x Step 2 CK Multiple-Choice Question; MCQ)

Reliability: 0.76 (95% CI [0.70, 0.80])

SHARP Item Difficulties





SAQ Correct, Support Incorrect

SAQ Incorrect, Support Correct

What's happening here?

This case: Patient presents with GI issue, but the item content didn't clearly differentiate if it was a malabsorption or inflammatory issue.

Additional data collection:

~ 300 US, 100 International examines

Registered to take Step 2 CK in May, June, or July of 2024

Better gender and ethnicity representation

Permission to collect / use identifying information

“Exploratory” study:

~ 200 US students

SHARP Item “Variants”

Additional Questions

SHARP Item Response Time

Decomposed by Answer Part



Differential Diagnosis (Ddx)

Similar to Step 2 CS patient notes

More information on a student's reasoning process

Partial credit grading might help better differentiate levels of learners

Short Essay

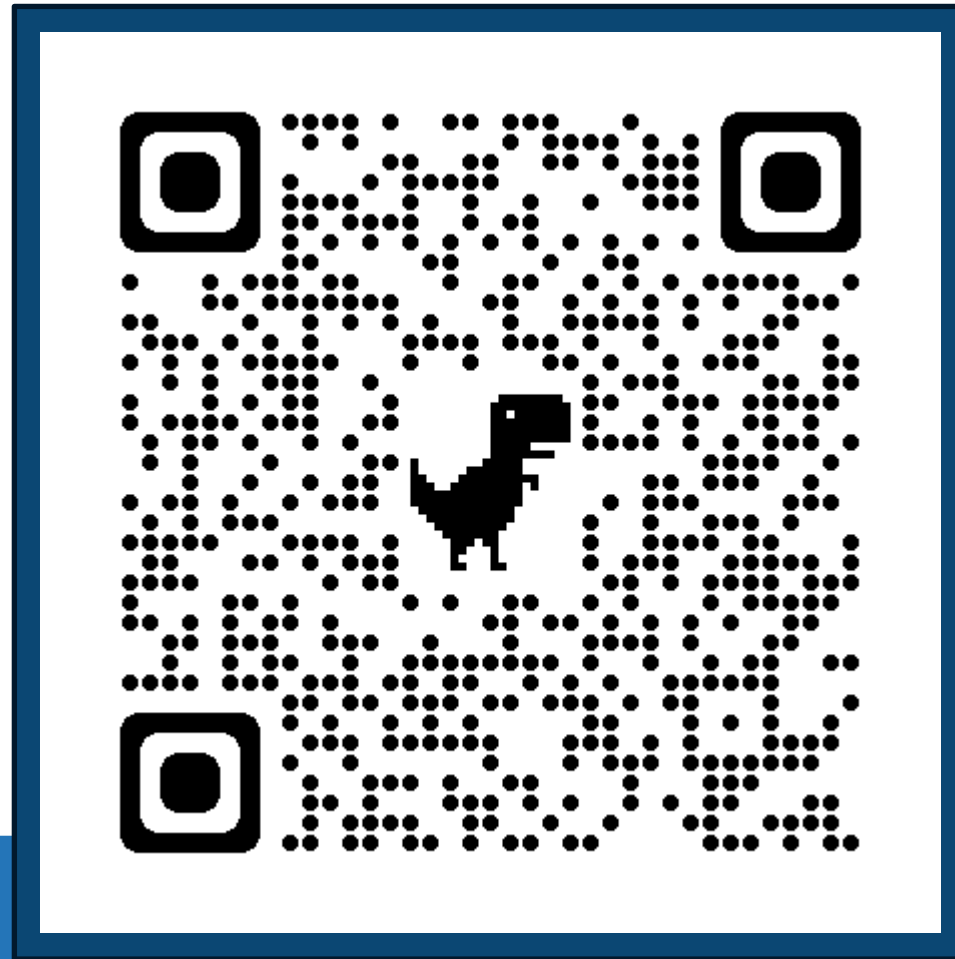
More depth: Why do these indicators support your clinical decision?

Need real data for NLP research

- Connections between clinical concepts
- Appeals to foundational scientific knowledge

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<https://github.com/runyoncr/SHARP-Research>



**ADDITIONAL
INFORMATION**