A Gap in Reporting: Student Demographics in Academic Universal Screenings

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Learner Objectives

- Determine the evidence-base for universal screening assessments they are using for their population of students

- Select academic screening tools that have evidence for use with their population of students

- Critically evaluate the generalizability of screening research and relevance of that research to their own practice

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NASP Domains

Practice Model Domains

- Domain 5: School Wide Practices to Promote Learning

- Domain 8: Diversity in Development & Learning

Background

Introduction

- Various groups have historically been marginalized and excluded from research
  - Race/Ethnicity
  - Students from low socioeconomic status backgrounds
  - English Language proficiency status
  - Students with Disabilities
- Educational performance may be lower for students of these backgrounds
- Universal Screening (particular in an RTI model) can be useful in reducing these educational discrepancies

Cartledge et al., 2016; Fish, 2017; National Center for Intensive Intervention; Skiba et al., 2008

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Introduction

- Research on new measures may not be validated for students from these backgrounds

- The quality of universal screening practices vary widely across schools and districts, and it is largely not known how culturally responsive these practices are

- Large-scale meta-analyses on universal screening or CBM-R (e.g., January & Klingbeil, 2020; Kilgus et al., 2014) have listed similar limitations – few studies publish demographic data or disaggregated results

Cartledge et al., 2016; Glover & Albers, 2007; Mellard et al., 2009; National Center for Intensive Intervention

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Purpose and Research Questions

To examine the extent to which racially, culturally, and linguistically diverse students are represented in academic universal screening studies

Research Questions

1. What are the available universal screening tools to measure academic constructs?

2. What is the frequency of academic universal screeners and academic outcome measures in research studies?

3. What are the demographic makeups of students in studies on universal screenings?

4. What is the representation of student demographic characteristic categories in academic universal screening studies compared to the United States and Colorado?

Method
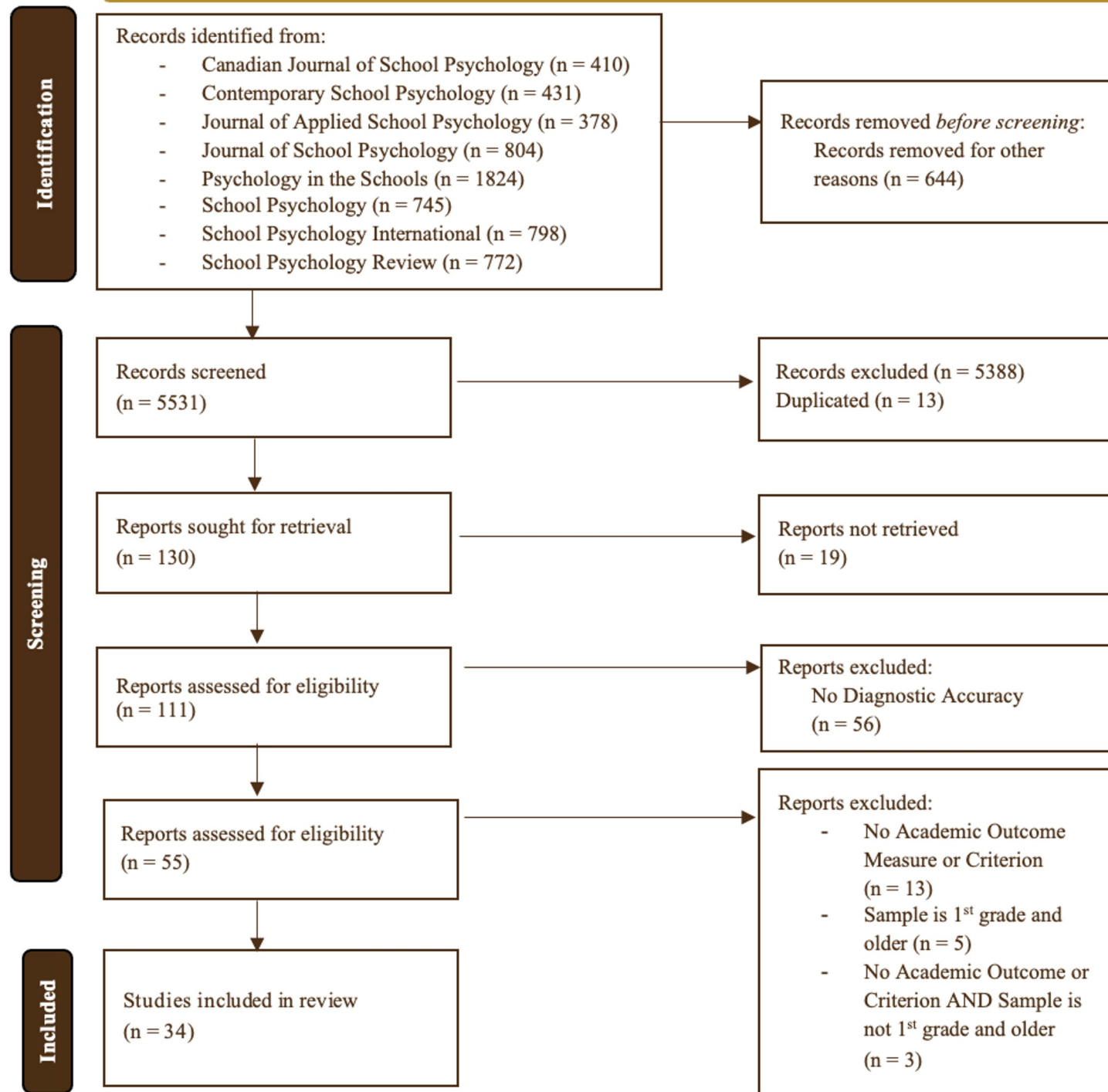
Records identified from:
- Canadian Journal of School Psychology (n = 410)
- Contemporary School Psychology (n = 431)
- Journal of Applied School Psychology (n = 378)
- Journal of School Psychology (n = 804)
- Psychology in the Schools (n = 1824)
- School Psychology (n = 745)
- School Psychology International (n = 798)
- School Psychology Review (n = 772)

Records removed *before screening*:
Records removed for other reasons (n = 644)

Exclusion Criteria:

Specific types of articles:
- About the Contributors (n = 1), Annotated Bib (n = 2), Announcement (n = 3), Annual Index (n = 3), Antiracism Statement (n = 1), Call for Papers (n = 3), Case Study (n = 2), Commentary (n = 100), Contents (n = 4), Contribution (n = 1), Discussion (n = 19), Editorial (i.e., Editorial, Editorial Board, Editorial Comment, Editorial Introduction, Editor's Note, Editorial Note, Editorial Notice, Guest Editorial, From the Editor, From the Guest Editor, Guest, Letter to the Editor, n = 163), Epilogue (n = 1), Erratum (i.e., Correction and Corrigendum; n = 30), Essay (n = 3), Ethics (n = 3), Introduction (n = 52), Issue Info (n = 63), Notice (n = 1), Report (i.e., Brief Report, Case Report; n = 19) Research Brief (n = 4), Research Into Practice (n = 1), Retraction Notice (n = 1), Review (i.e., Book Review, Test Review, Review, Reviewers List, n = 137) Short Communication (n = 1), and Tools for Practice (n = 26)

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Records identified from:
- Canadian Journal of School Psychology (n = 410)
- Contemporary School Psychology (n = 431)
- Journal of Applied School Psychology (n = 378)
- Journal of School Psychology (n = 804)
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- School Psychology (n = 745)
- School Psychology International (n = 798)
- School Psychology Review (n = 772)

Records removed *before screening*:
Records removed for other reasons (n = 644)

Records screened
(n = 5531)

Records excluded (n = 5388)
Duplicated (n = 13)

Exclusion Criteria:

Did not mention:
- (a) universal screening or screening and
- (b) academic and/or
- (c) academic skills such as writing, math, reading, early literacy, oral reading fluency, or spelling

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Identification

Records identified from:
- Canadian Journal of School Psychology (n = 410)
- Contemporary School Psychology (n = 431)
- Journal of Applied School Psychology (n = 378)
- Journal of School Psychology (n = 804)
- Psychology in the Schools (n = 1824)
- School Psychology (n = 745)
- School Psychology International (n = 798)
- School Psychology Review (n = 772)

Records removed *before screening*:
Records removed for other reasons (n = 644)

Screening

Records screened
(n = 5531)

Records excluded (n = 5388)
Duplicated (n = 13)

Reports sought for retrieval
(n = 130)

Reports not retrieved
(n = 19)

Inclusion Criteria:
- Articles that were empirically based (i.e., extant datasets, retrospective analyses, non-conceptual studies)

Exclusion Criteria:
- Not empirically based (i.e., meta-analyses and other systematic reviews)

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Identification

Records identified from:
- Canadian Journal of School Psychology (n = 410)
- Contemporary School Psychology (n = 431)
- Journal of Applied School Psychology (n = 378)
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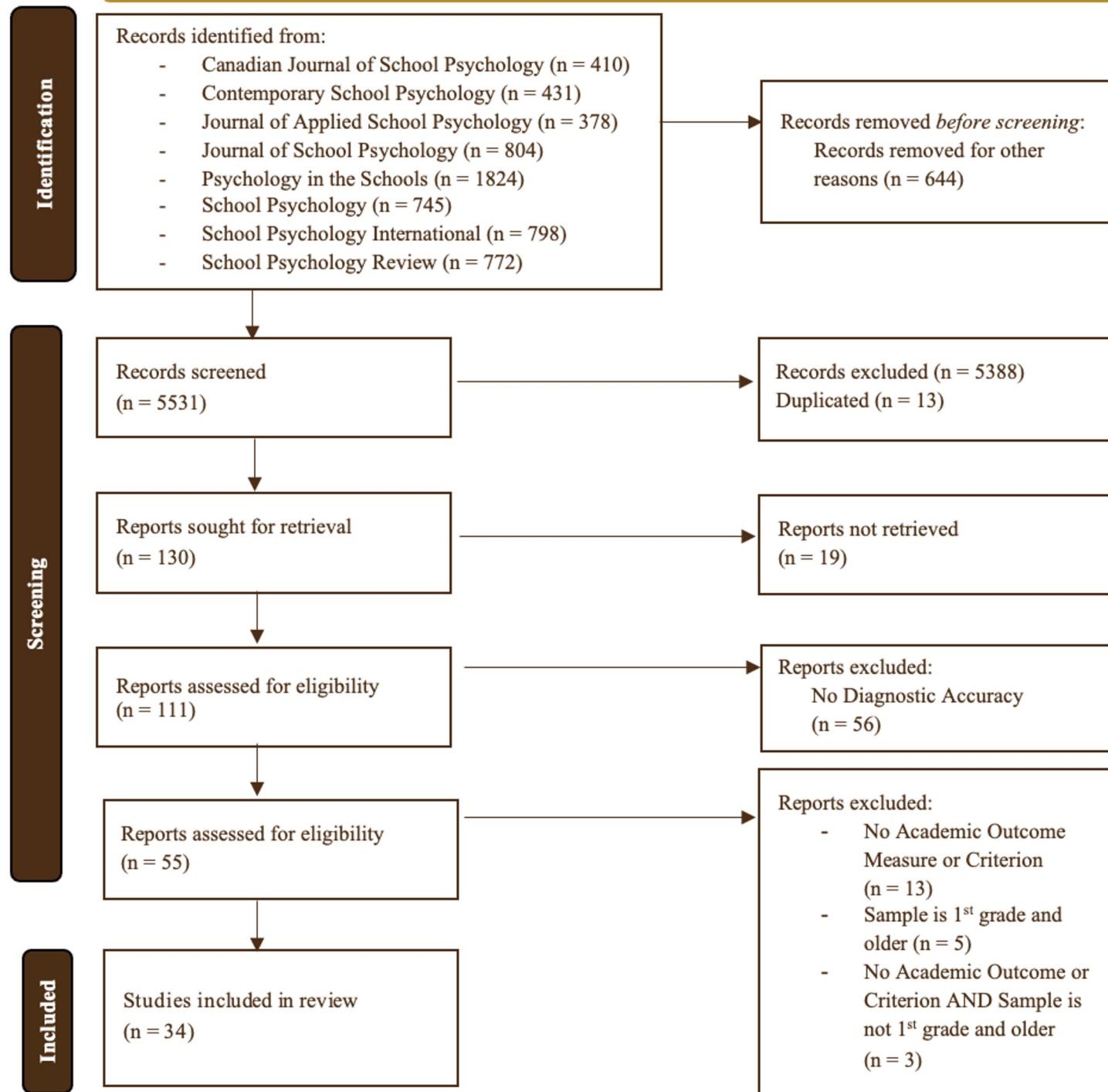
Reports assessed for eligibility
(n = 111)

Reports excluded:
No Diagnostic Accuracy
(n = 56)

Inclusion Criteria:
- Included diagnostic accuracy analysis (i.e., classification accuracy, receiver operator characteristic curve, area under the curve, sensitivity, specificity, etc.).

Exclusion Criteria:
- Included only validity, reliability, or growth modeling analyses

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Identification

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- Journal of Applied School Psychology (n = 378)
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Screening

Records screened (n = 5531)

Records excluded (n = 5388)
Duplicated (n = 13)

Reports sought for retrieval (n = 130)

Reports not retrieved (n = 19)

Reports assessed for eligibility (n = 111)

Reports excluded:
No Diagnostic Accuracy (n = 56)

Reports assessed for eligibility (n = 55)

Reports excluded:
- No Academic Outcome Measure or Criterion (n = 13)
- Sample is 1st grade and older (n = 5)
- No Academic Outcome or Criterion AND Sample is not 1st grade and older (n = 3)

Included

Studies included in review (n = 34)

Inclusion Criteria:
- (a) academic universal screener
- (b) academic outcome measure
- (c) sample included elementary-aged participants or older
- Academic US = any assessment that measured an academic construct such as CBM, CAT, and teacher ratings

Exclusion Criteria:
- Academic behavior, such as academic engagement
- Pre-kindergarten and kindergarten students

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Final Inclusion Criteria

- (a) empirically based
- (b) utilized diagnostic accuracy statistics
- (c) included an academic universal screener and outcome measure
- (d) included elementary-aged students

- Next Step: Coding & Data Extraction! ($n = 34$)

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Coding & Data Extraction

- **Article Info**
  - Title
  - Journal
  - Author
- **Participant Info**
  - Sample size
  - Grade(s)
  - Setting
  - School type

- **Demographics (n;%)**
  - Race/Ethnicity
  - Gender
  - ELL status
  - Other language info
  - Free/Reduced lunch
  - Other SES info
  - Special Ed status

- **Measures**
  - Academic US
  - Outcome
  - Other
  - Lag time
- **Disaggregation**
  - Did study disaggregate data?
  - If yes, how so?

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Results

Race/Ethnicity

n=4; 12%

n=30; 88%
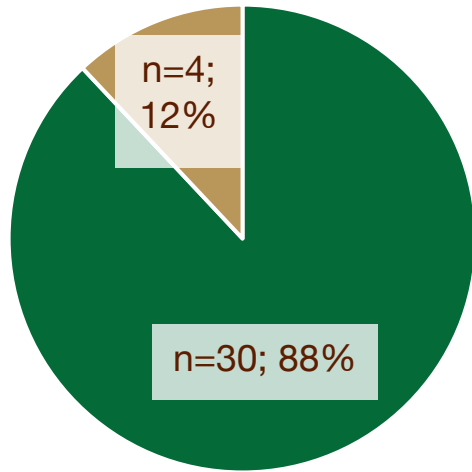
Included Excluded

Gender

n=9; 26%

n=25; 74%
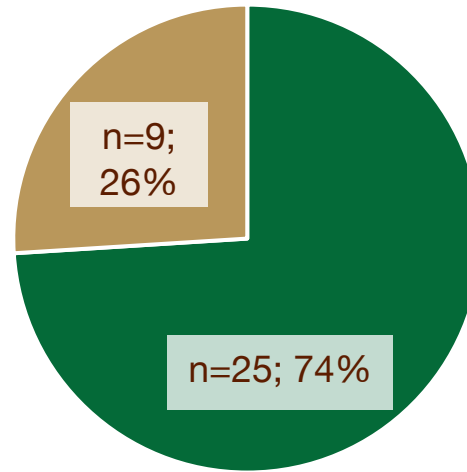
Included Excluded

FRL

n=14; 41%

n=20; 59%
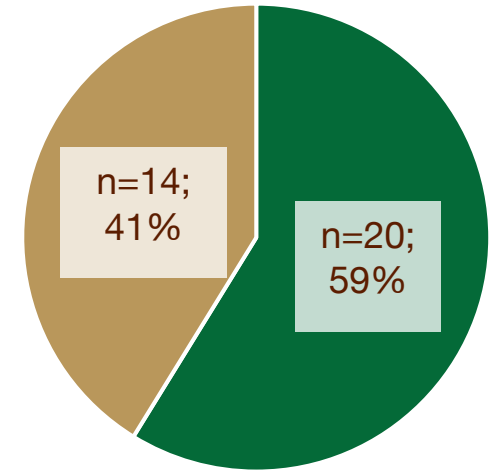
Included Excluded

Special Ed

n=8; 24%

n=26; 76%
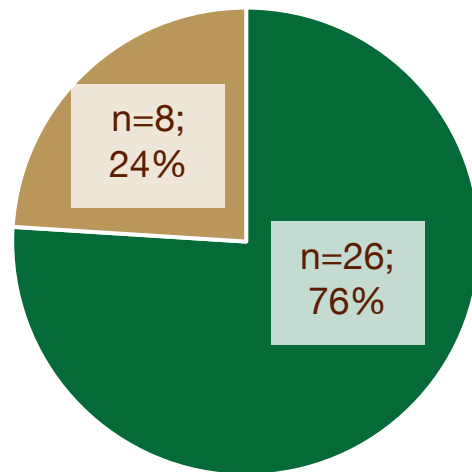
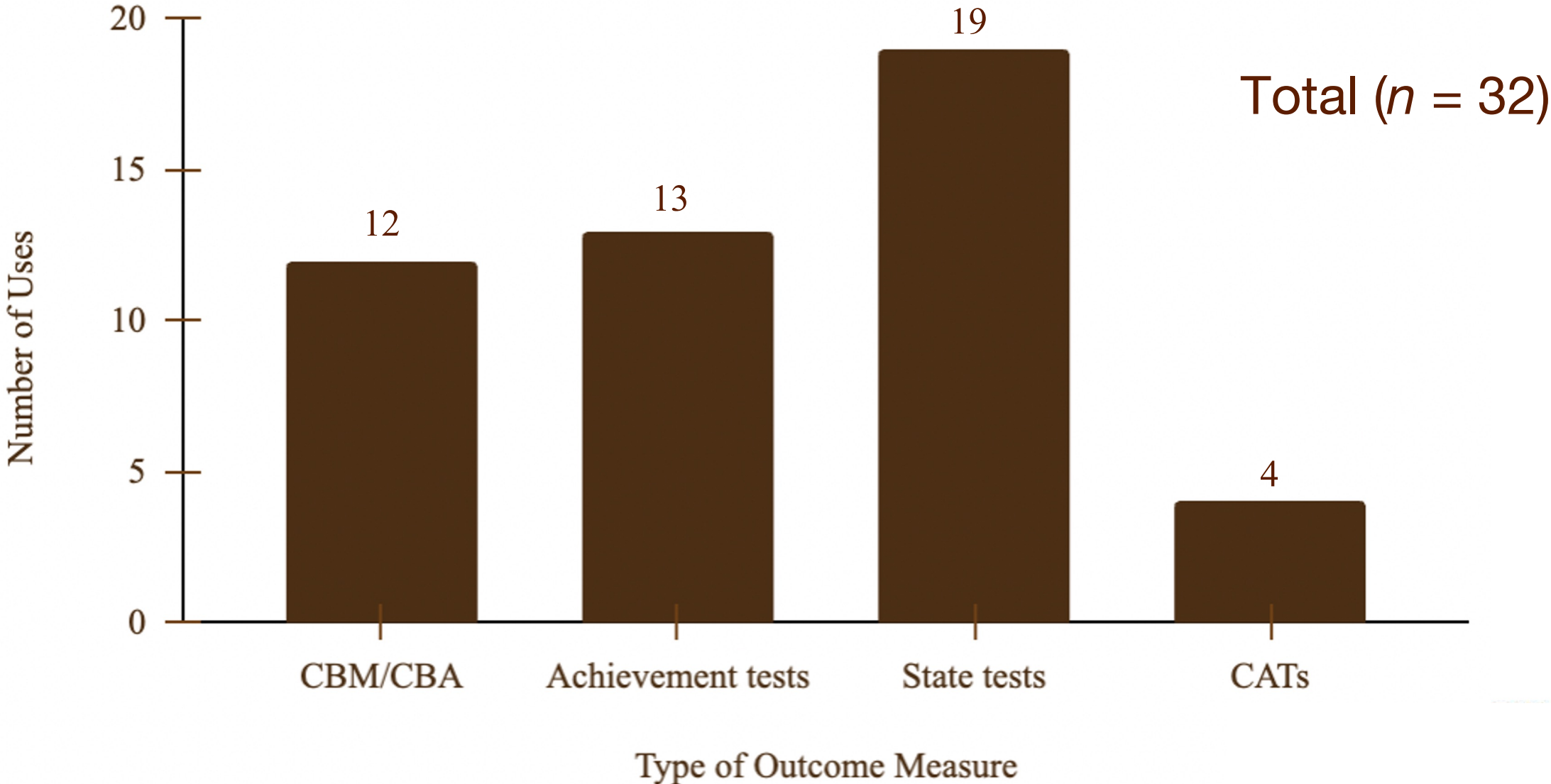Included Excluded

ELL

n=15; 44%

n=19; 56%
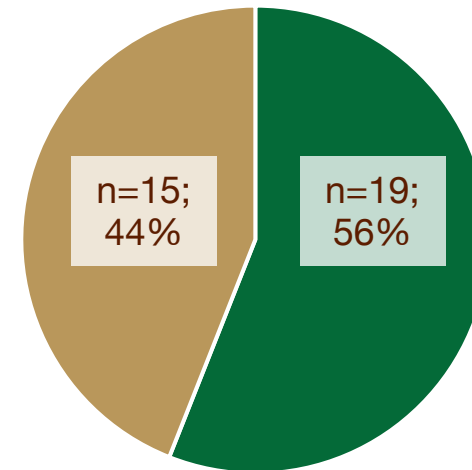
Included Excluded

Academic Universal Screeners
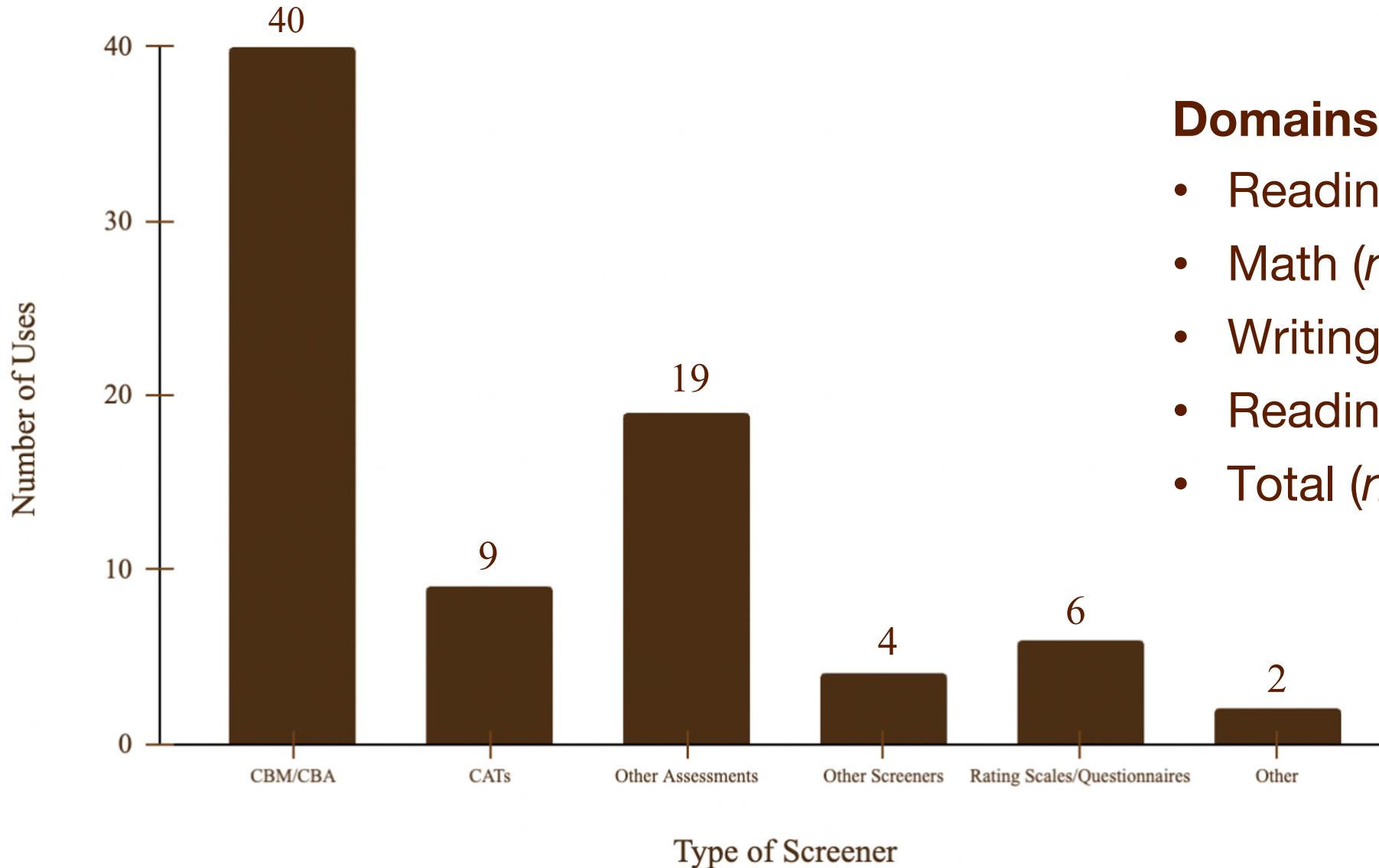
Domains
- Reading (n = 51; 64%)
- Math (n = 19; 24%)
- Writing (n = 3; 4%)
- Reading and Math (n = 7; 9%)
- Total (n = 80)

Academic Outcome Measures


Total ($n = 32$)

Sample Information

- Sample Size
  - Mean = 2,538 students
  (SD = 286.71; *range* = 67 - 34,855)

- School Level
  - Elementary (n = 17; 50%)
  - Middle (n = 3; 9%)
  - Elementary and middle (n = 3; 9%)
  - Not specified (n = 11; 33%)

- Grade
  - 1st – 8th

- School Type
  - Public school (n = 7; 20%)
  - Private (n = 1; 3%)
  - Public and private (n = 2; 6%)
  - Other (n = 1; 3%)
  - Not specified (n = 23; 68%)

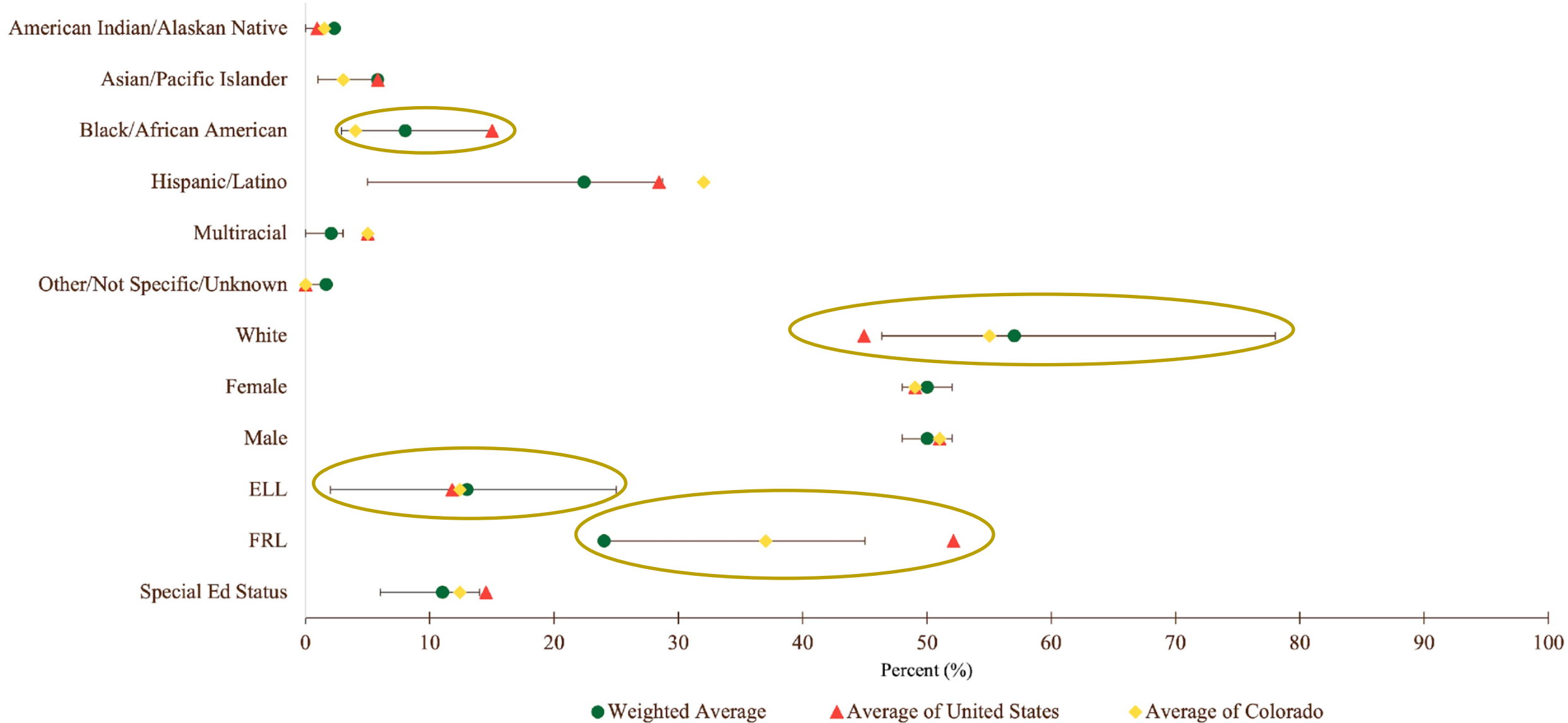LEHIGH
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Locations
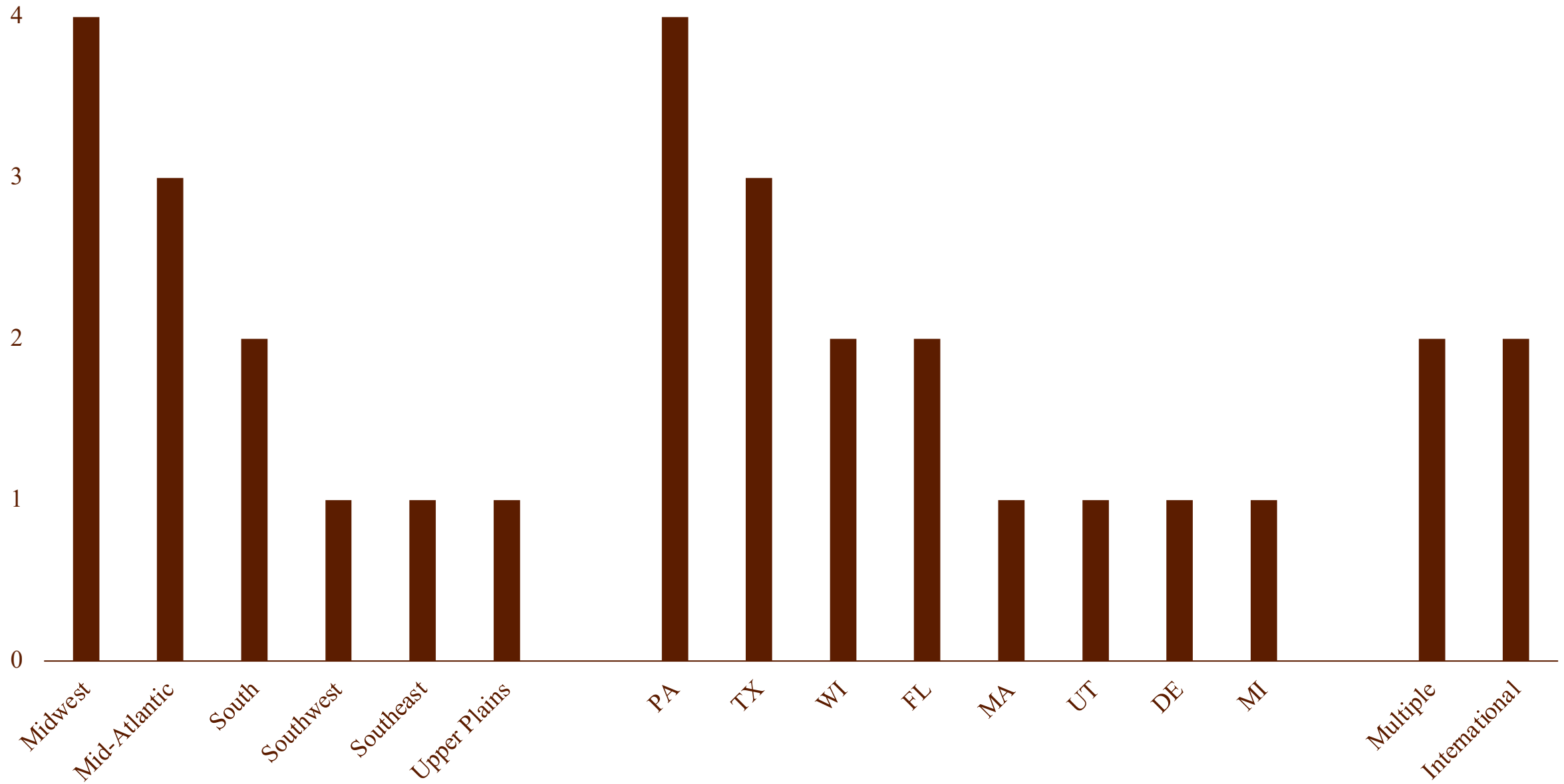
Discussion

Representation of Demographic Characteristics Categories (Full Sample)
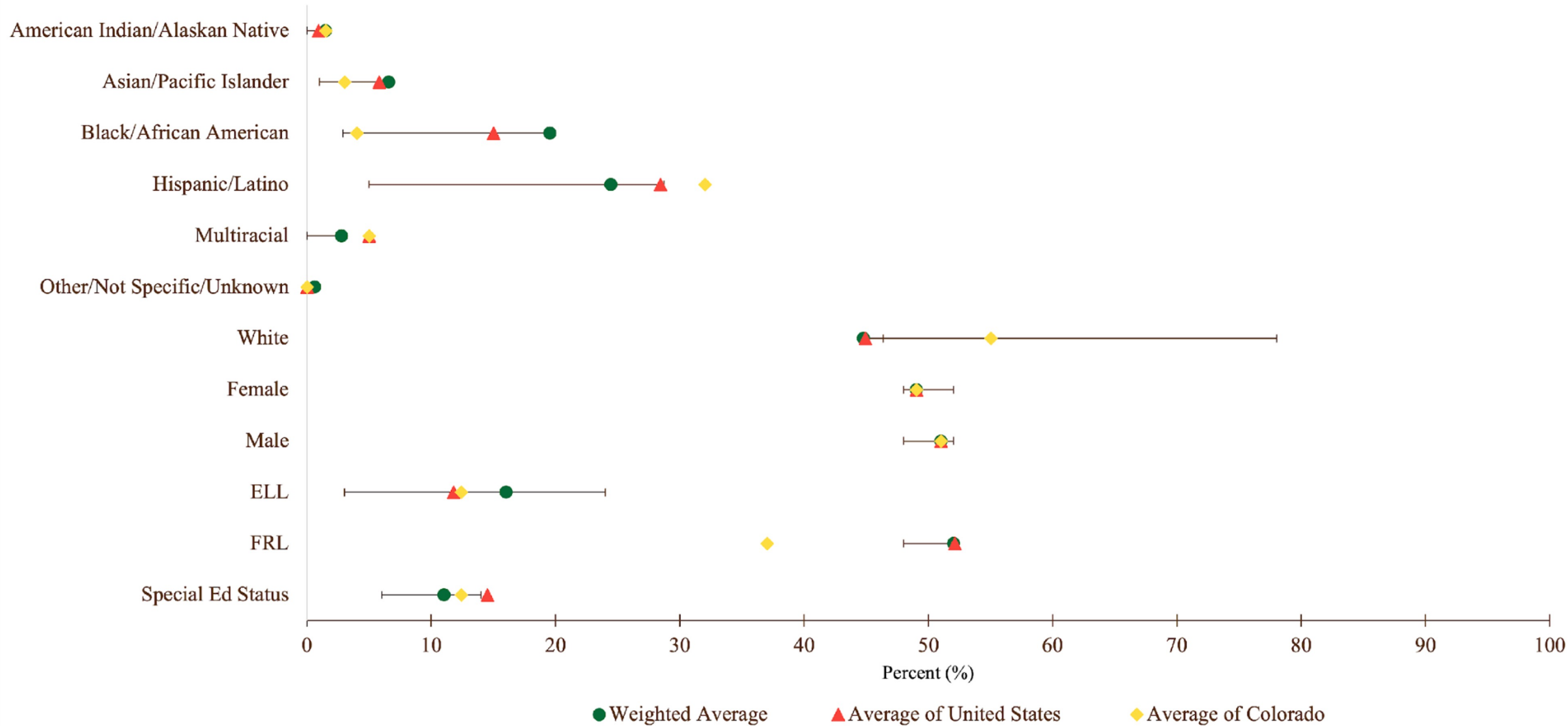
# Representation of Demographic Characteristics Categories (w/o Outliers)

Studies that Disaggregated Data

- Hosp et al. (2011)
  - Disaggregates by FRL vs Non-FRL, ELL vs Non-ELL, SWD vs Non-SWD, Hispanic/Latinx vs White, and Native American vs White
  - Floor effects found across various grades and subgroups and differences in SE and SP for 3rd grade ELL and all FRL groups

- Pearce & Gayle (2009)
  - Disaggregates by White vs Native American
  - DORF was generally successful across groups but there was a significantly higher number of false negatives amongst the Native American students

- Stevenson et al. (2016)
  - Disaggregates by FRL vs Non-FRL and LD vs Non-LD
  - Few differences were found between subgroups (slight overidentification of LD students), but ORF and Maze measures may be less effective for classifying middle school students

- VanDerHeyden & Witt (2005)
  - Disaggregates by White vs Minority and Male vs Female
  - Fewer minority students were being referred by both systems, while teachers disproportionately referred male students

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Implications for Research & Practice

- Few results were disaggregated by any demographic feature aside from grade level – future research should include more partial ROC curve analyses

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Partial ROC Curve Analysis

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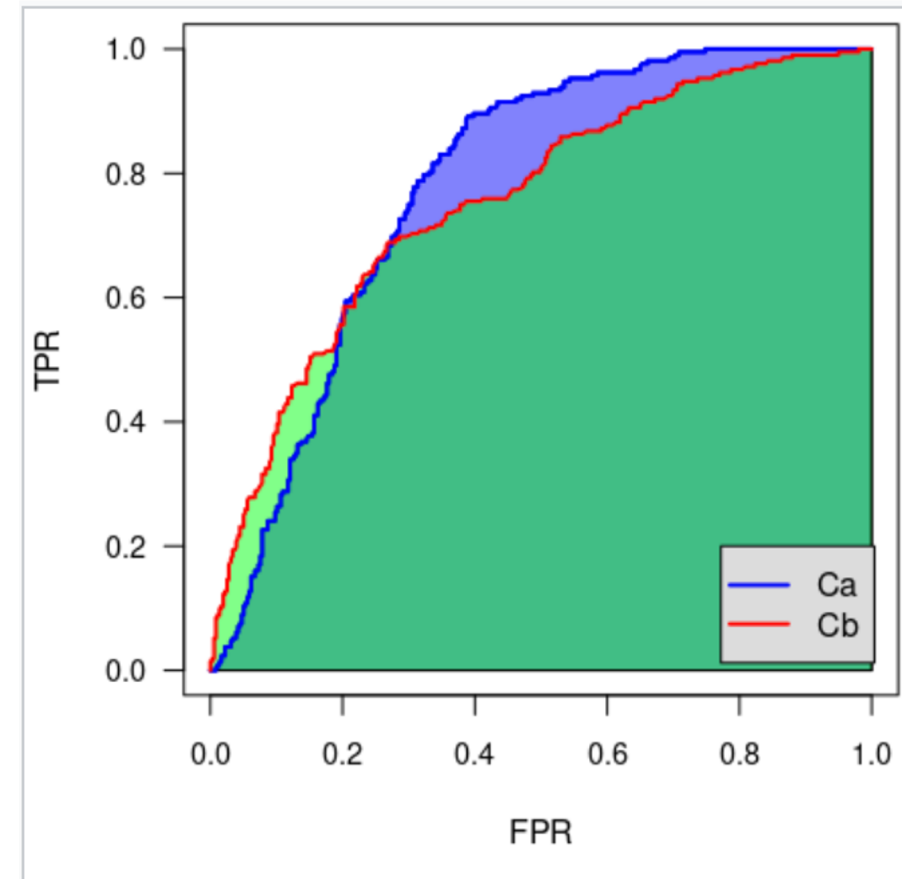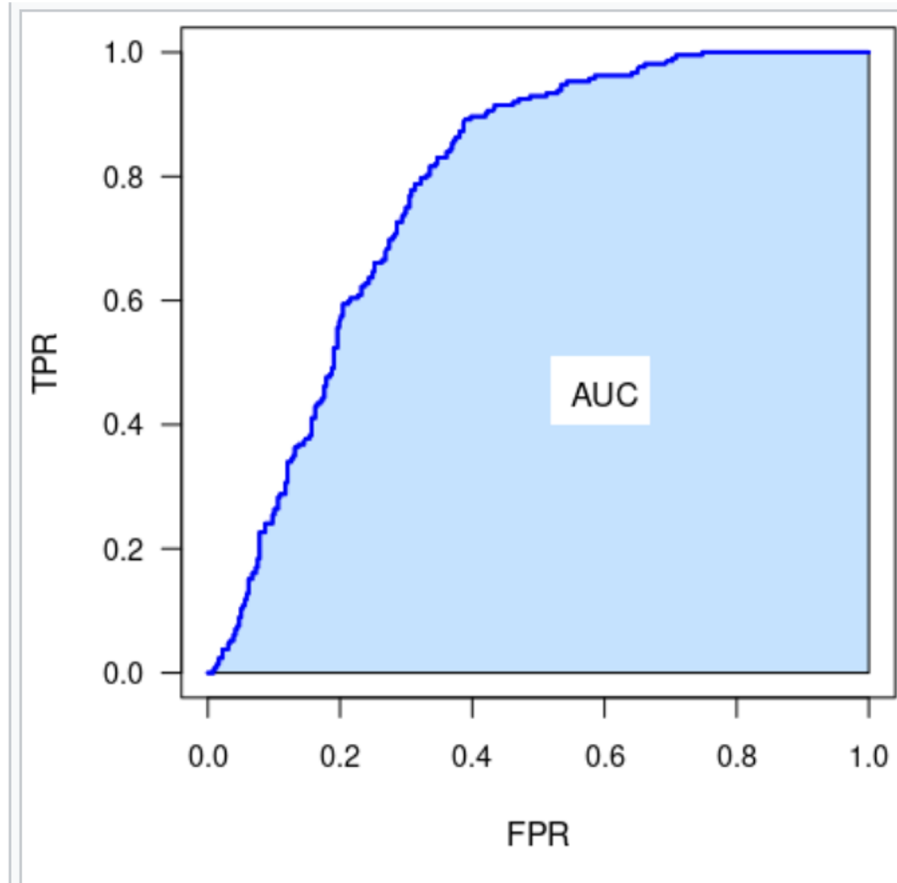
Implications for Research & Practice

- Few results were disaggregated by any demographic feature aside from grade level – future research should include more partial ROC curve analyses

- Encourage more rigorous standards from organizations like NCII when researchers publish their tools

- Community and researcher partnerships: who is represented in the sample when you are looking for participants?

- Be critical consumers of the measures you select: what population of students are you serving?

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Limitations and Future Directions

- Limitations
  - Only looks at school psychology journals – may exclude other relevant articles that disaggregate data that were published outside of school psychology
  - Excludes early childhood (intentionally) and high school (unintentionally)

- Future Directions
  - Expand and update beyond the field of school psychology
  - Delve further into how appropriate highlighted measures are for diverse students into universal screening

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Thank you! Questions?

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