Where Are We: Psychometric Properties of Pain Assessment Scales for Use in Chinese Children
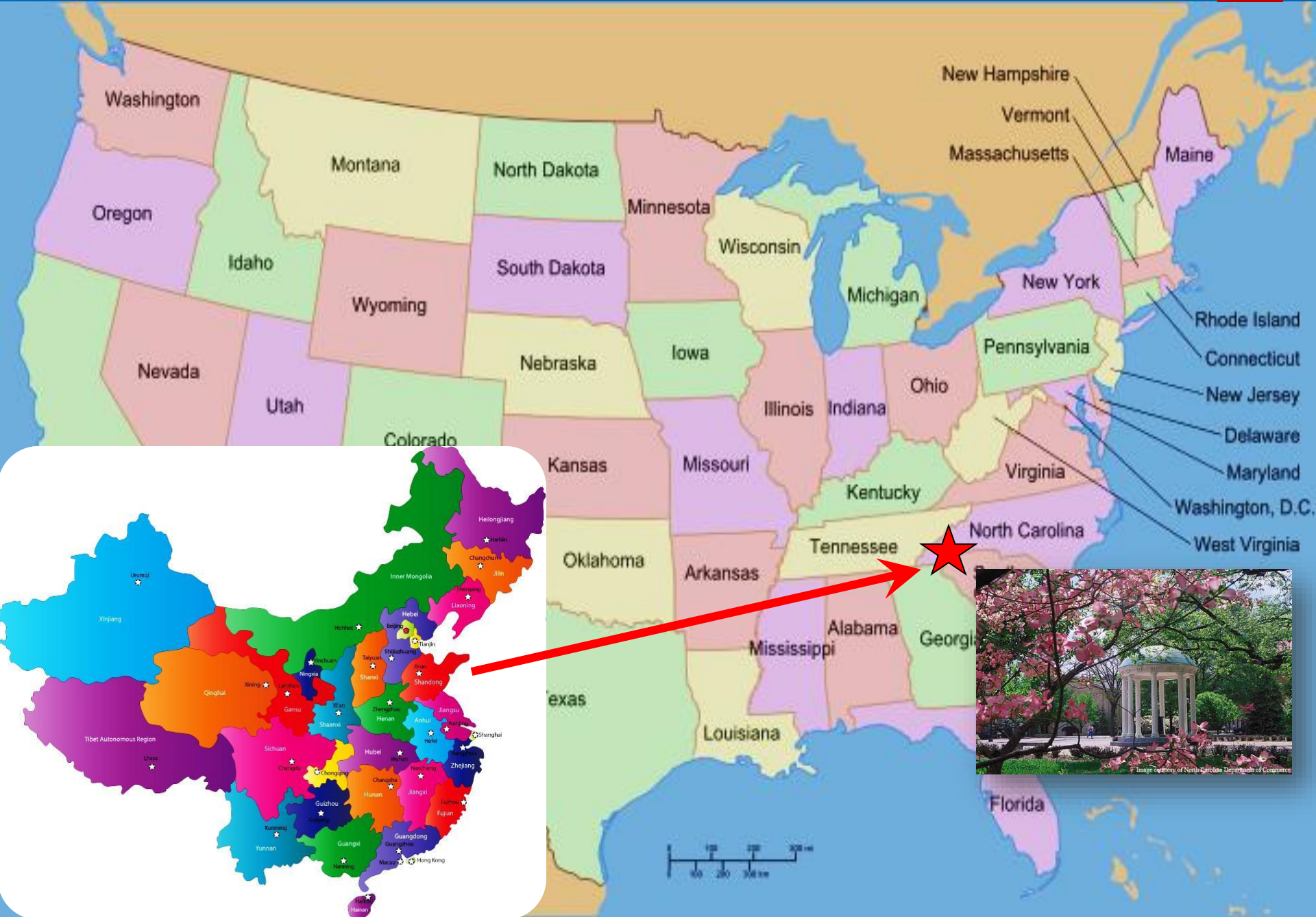
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Disclosures

Learning Objectives

- Be familiar with pain measures for Chinese children;

- Appreciate the psychometric properties of pain measures for Chinese children;

- Understand the coding system for evaluating psychometric properties;

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- The authors declare no conflict of interest;

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Background

- In the West, for at least a decade, pain has been regarded as the 5th vital sign; American Pain Society, 1999

- Children can experience moderate to severe pain related to surgeries or other invasive procedures; Bai & Hsu, 2013; Chen et al., 2012

- Pain can cause negative consequences for children; children's pain should be assessed as a means to control these consequences; Taddio et al, 2002; Hohmeister et al., 2009

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the 5th vital sign™

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Background *cont'd*

- Regular pain assessment with measures that have good psychometrics in the population of interest is the foundation of pain management;

- China's population (1.34 Billion) is the largest in the world, and 17% of China's population are children (0~14 years old); China.com.cn, 2011

- Pain management in Chinese children is far behind that for children in the West;

Bai, 2014; Sun et al., 2014

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Rationale

- Psychometric properties of pain measures for Chinese children are unknown; Bai, 2014

- Additionally, the process used for transcultural translation of these pain measures is unclear; Sun et al., 2013, 2014

- Thus, results of randomized clinical trials that use these measures must be questioned; Bai, 2014; Sun et al., 2013, 2014
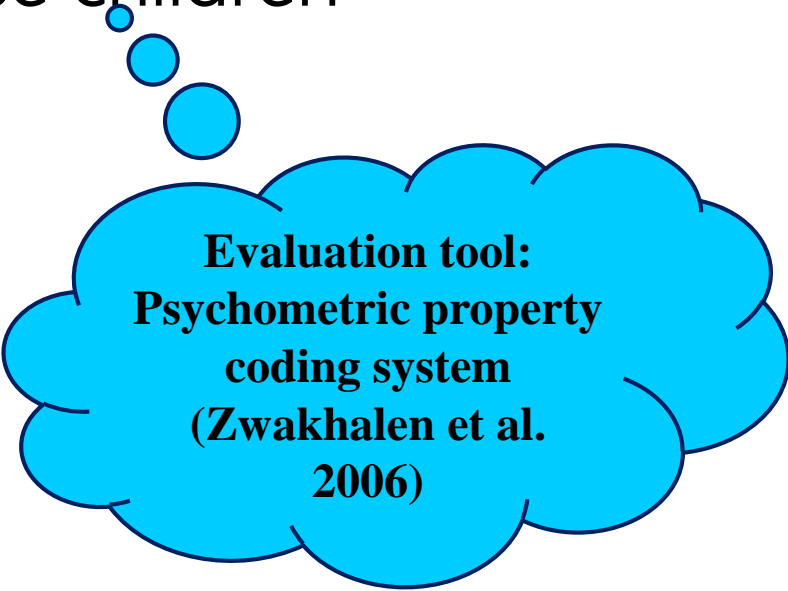
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Research Purpose

- Review and evaluate the psychometric properties of pain measures used in published studies of Chinese children

Evaluation tool:
**Psychometric property coding system
(Zwakhalen et al. 2006)**

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Methods
Search Strategies

- **Chinese databases:** CNKI, Wan-Fang, VIP and Sino-Med
- **English databases:** PubMed, CINAHL, Health and Psychosocial Instruments and PsycINFO
- **Search date:** Inception of the database to Sep. 2013
- **Search Terms:** (child OR toddler OR infant OR adolescent) AND (pain OR analgesia) AND (scale OR assessment); (pain OR analgesia) AND (China OR Chinese)
- Reference list is also reviewed;
- **Filters:** Age=0-18 years; Language = Chinese/English

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Inclusion & Exclusion Criteria

Included studies

- Reported information related to the reliability and/or validity of pain measures used in the study;

- Sample comprised of Chinese children;

- Published in Chinese journals indexed by the ISTIC or in peer-reviewed English journals;

Excluded studies

- Review or translated articles;

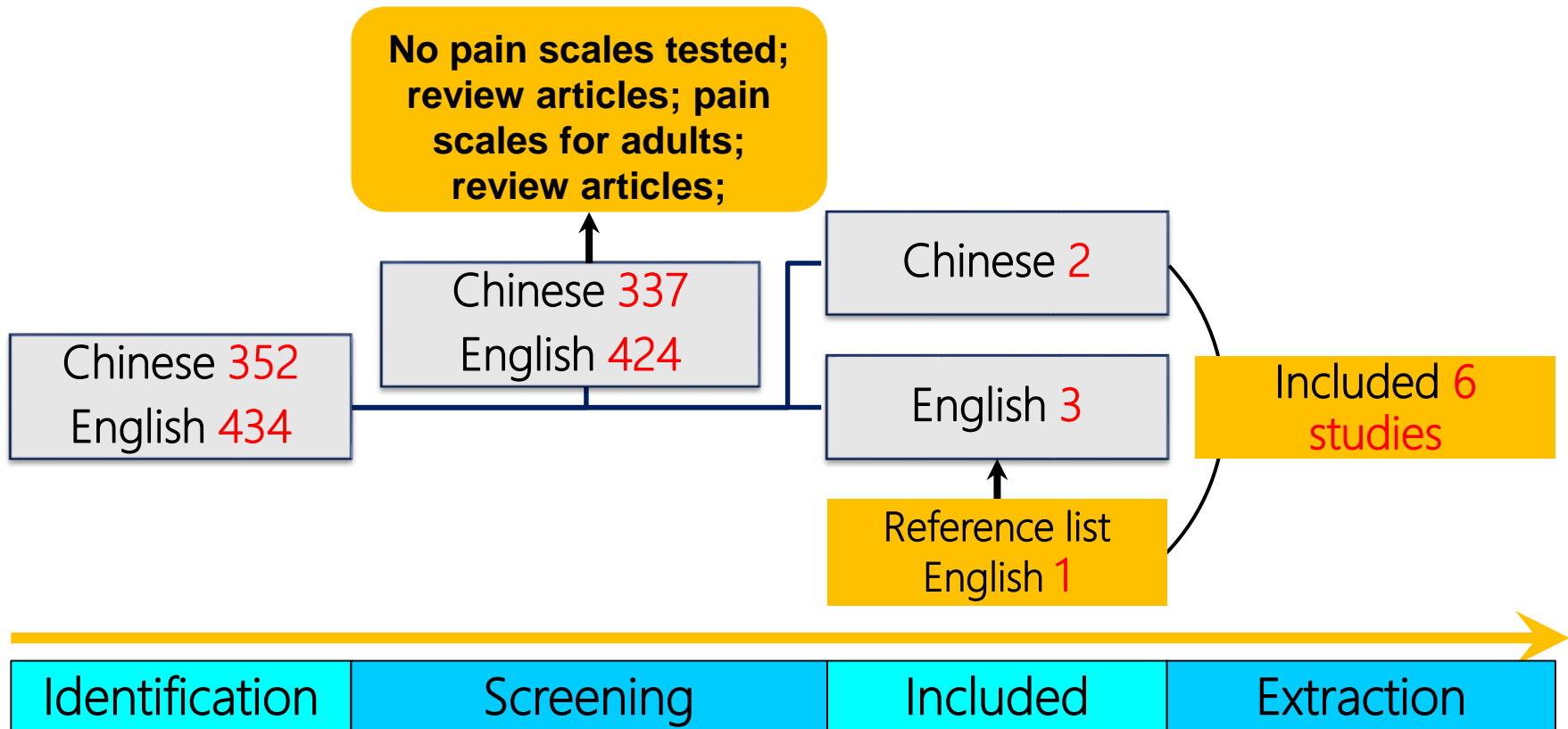- Not published in Chinese or English;

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Flowchart of Data Selection

No pain scales tested; review articles; pain scales for adults; review articles;

Chinese 352
English 434

Chinese 337
English 424

Chinese 2

English 3

Reference list
English 1

Included 6
studies

Identification | Screening | Included | Extraction

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Psychometric Coding System

- **10 items:** origin of items for the measure under evaluation, study sample size, evidence of reliability and validity in the study, and feasibility issues

- **Scoring:** items scored 0 to 2, items scores summed for a total score 0-20)

- **Categories for the total score:** Very Good=15-20; Good=12-14.9; Acceptable= 10-11.9; Unacceptable=less than 9.9

Zwakhalen et al., 2006

- **Added item:** Instrument translation

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Results
Study Characteristics

Study information	Sample size (n)	Age (Year)	Type of pain
Bai et al. (2012).	170	I [a]: 0-7 S [a]: 0-7	Postoperative pain
Jia (2012).	20	I: 0-7 S: 0-5	Procedural pain in burn
Liu et al. (2012).	100	I: 0-7 S: 0.5-3	Postoperative pain
Yeh (2005).	317	I: NA S: 3-7	Procedural, post-operative pain and others
Chen et al. (2012).	108	I: 38-42 weeks S:28-42 weeks	Procedural pain
Liaw et al. (2012).	60	I: NA S: 28-37 weeks	Procedural pain

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FLACC

Comfort-Behavior Scale

Pain Observation Scale for Young Children

Asian Version of the Oucher Scale

Neonatal Facial Coding System

Pain Assessment Scale for Preterm Infants

Two in Chinese Four in English

6 Studies Included

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Dimension of Pain Scales

Scale	Total score (range)	Behavioral	Self-report	Physiological	Other
FLACC	0-10	✔			
COMFORT-B	6-30	✔			
POCIS	0-7	✔			
Asian Version Oucher Scale	0-10	✔	✔		
NFCS	0-9/0-10	✔			
PASPI	0-18	✔		✔	✔

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Specific Pain Scales
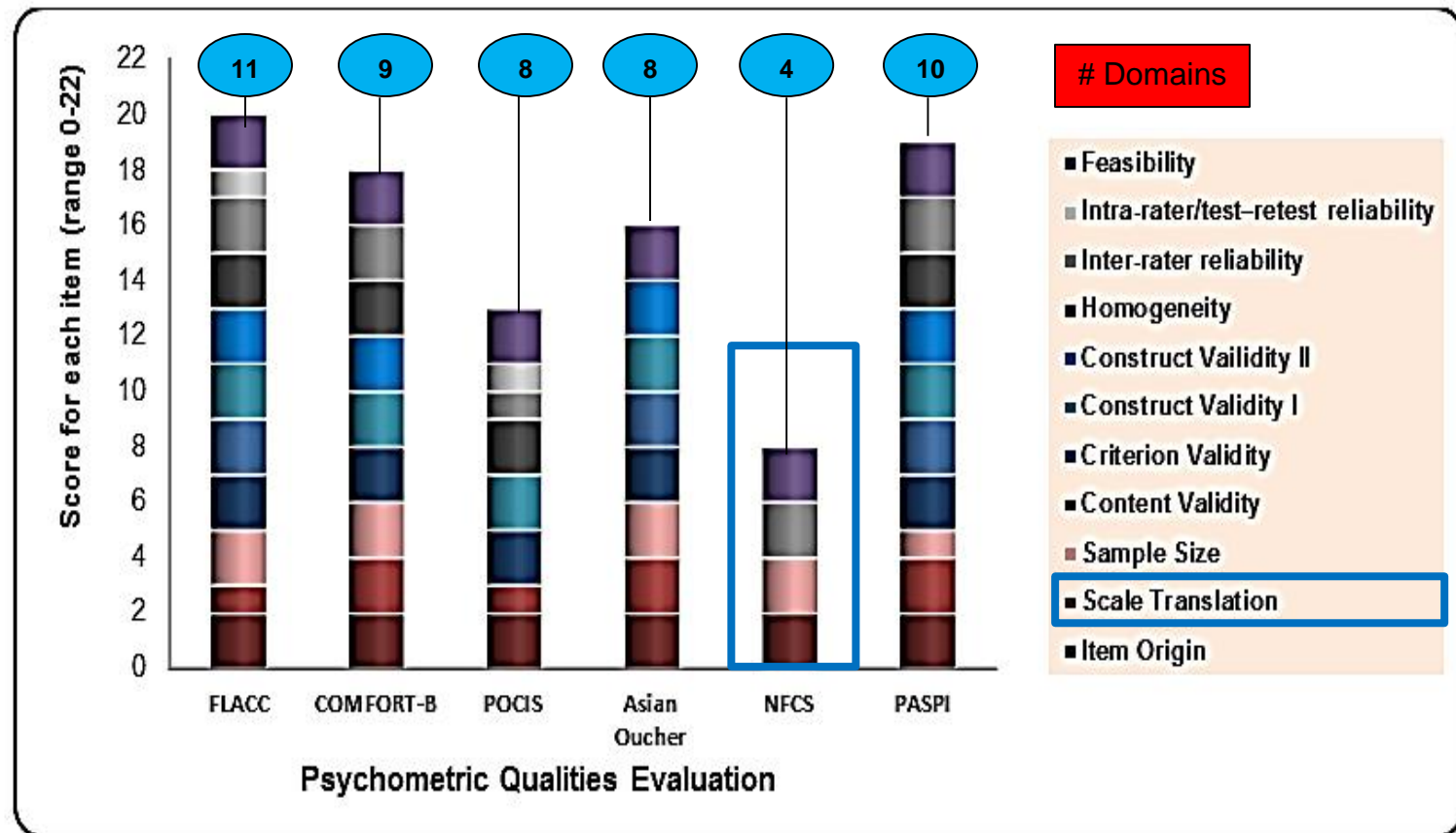
Overall Evaluation
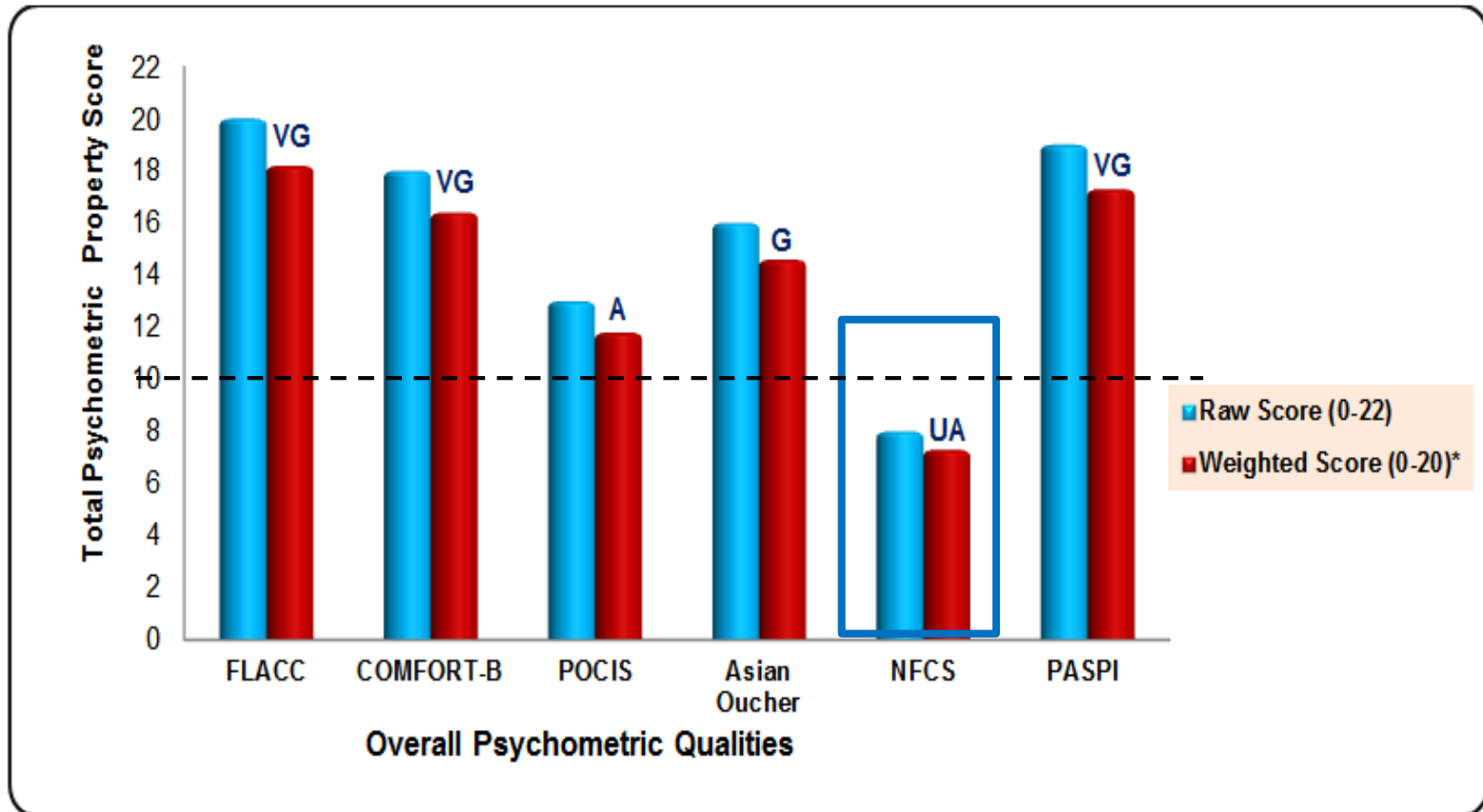
Discussion

- Consistent with Sun et al. (2013), few randomized clinical trials with pain as an outcome assess the psychometric properties of the pain measure(s);

- FLACC, COMFORT-B and PASPI have very good psychometric properties when administrated for pain assessment in children;

- No article included in this study reported psychometric information about self-reported pain measures performed in Chinese children;

Implications

- Transcultural translation of pain measures for use in Chinese children should follow accepted standards;

- Pain measures would be theory-based, for example, informed by theories of child development;

- Future research of pain in Chinese children should include psychometric evaluation of how the pain measures performed in the study sample;

- Protocols for assessing and managing pain in Chinese children are needed. Protocols should include pain measures and interventions that are theory- and evidence-based;

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Conclusion & Future Directions

- Six pain measures were examined in Chinese children and five had an acceptable to very good level of reliability and also evidence of validity

- Future studies should be conducted to assess the psychometric properties of self-report pain measures especially in older Chinese children and in a variety of pain situations;

- Policies and procedures should be developed to help clinicians close the gap between pain assessment and pain treatment.

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Key References

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Questions?

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