**Background**

Patient-Reported Outcomes Measurement Information System - Paediatric-25 Profile version 2.0 (PROMIS-25) is a validated self-reported questionnaire for measuring HRQOL in children with chronic diseases and cancers. It comprises physical functions, anxiety, depressive symptoms, fatigue, peer relationships and pain interference domains (Fig.1). However, no research has culturally adapted PROMIS-25 for Chinese children with cancer.

**Objectives**

To translate and culturally adapt PROMIS-25 for Chinese children in Hong Kong, and to evaluate its psychometric properties.

**Methodology**

- **Functional Assessment of Chronic Illness Therapy (FACIT)** translation methodology was adopted (Fig.2).
- Three panel members evaluated the Semantic Equivalence Score (SES) and Content Validity Index (CVI).
- Validated on 103 Chinese children undergoing cancer treatment (10 to 18 years) in a local public hospital.
- Psychometric properties were evaluated and the methods used were shown below:

  - **Structural validity**
    - Principal Component Analysis and item fit statistics
  - **Convergent & divergent validity**
    - Correlations between PROMIS-25 domains, Chinese Patient Health Questionnaire-9 (C-PHQ-9), Chinese Paediatric QOL Inventory™ 4.0 domains (Chinese PedsQL™ 4.0) & Numeric Pain Rating Scale (NPRS)
  - **Internal consistency**
    - Cronbach’s alpha of each domain of Chinese PROMIS-25
  - **Test-retest reliability**
    - Intraclass Correlation Coefficient (ICC)
  - **Responsiveness**
    - Tested against 24 predefined hypotheses with anticipated magnitudes and directions of correlation between Chinese PROMIS-25 domains, C-PHQ-9 and Chinese PedsQL™ 4.0 domains following the cancer treatment
  - **Minimal Important Difference (MID)**
    - by Anchor-based method using Numeric Global Rating of Change Scale as an anchor

**Results**

- The SES and CVI were both 100%
- The unidimensionality of each domain were supported (the variance explained >55.5% and eigenvalues of the secondary construct <2.0).
- All items showed good item fit statistics (0.6 - 1.4)
- For convergent validity, all domains demonstrated moderate to large correlations with Chinese PedsQL™ 4.0 domains (r ≥ 0.69), C-PHQ-9 Item-4 & C-PHQ-9 total score (r = 0.75-0.80), except NPRS (r = 0.44)
- For divergent validity, all domains had low correlations with Chinese PedsQL™ 4.0 domains (r ≤ 0.21), C-PHQ-9 Item-4 & NPRS (r = -0.12)
- Good internal consistency (Cronbach’s alpha: 0.82-0.85), test-retest reliability (ICC: 0.90-0.97) and responsiveness (confirmed 22 of the 24 predefined hypotheses)
- All domains (except peer relationships) indicated deteriorated functioning after two days of cancer treatment
- The MIDs were determined: Physical Function: 12.3; Anxiety: 17.2; Depression: 15.4; Fatigue: 13.6; Peer Relationships: 6.5; and Pain Interference: 13

**Conclusion**

Chinese PROMIS-25 is a reliable and valid instrument for assessing HRQOL among Chinese children with cancer. With this validated self-reported instrument, the changes of health-related functioning can be well documented so that early supplementary service to address the HRQOL can be considered.