

Assessing the Psychometric Performance of the Experimental EQ-TIPS (v2.0) in assessing the health-related quality of life of Stunted Children in Laos

MSR41

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BACKGROUND

- We evaluated the ceiling effects, known-groups validity, and responsiveness of the Experimental EQ-TIPS-3L (v2.0) among caregivers of stunted children aged 0-36 months in Laos.

METHODS

- Stunted children's caregivers visiting paediatric hospital emergency department (ED) in Laos for any health problems self-completed EQ-TIPS three times:

Time Points (TP)	Administered by
TP1 (ED visit)	Self
TP2 (During hospitalization)	Self
TP3 (Post-discharge)	Interviewer (phone calls)

- Clinicians assessed patient's symptoms during TP1.
- EQ-TIPS data was collected from caregivers of healthy children recruited via convenience sampling.
- Ceiling effects was assessed among stunted and healthy children.
- Known-groups validity (KGV) was assessed by comparing EQ-TIPS level sum score (LSS), EQ VAS, and dimensions between stunted children differing in symptom count (1-3/≥4), vitamin deficiency (yes/no), and against healthy children. Cohen's d (d) and Cliff's delta were calculated to evaluate effect sizes (ES).
- Responsiveness to improvement was assessed using standardized effect sizes (SES), standardized response mean (SRM) and Cliff's delta across timepoints.

RESULTS

Table 1. Participant and Proxy characteristics.

Characteristics	Stunted (n= 100)	Healthy (n=100)
Sex of child: Male	54.0%	43.0%
Proxy's relationship to child: Mother	66.7%	74.0%
Proxy's education:	58.0% vs. Primary/Secondary/High school vs. College/University	68.0% vs. 42.0% 32.0%
Living area: Urban vs. Rural	35.0% vs. 65.0%	100.0% vs. 0

- (Table 2) The proportion of children reporting no problems on EQ-TIPS dimensions ranged from 4.0% (Pain) to 90.0% (Movement) in children with stunting and from 68.0% (Pain) to 98.0% (Play) in healthy children.

Table 2. Ceiling effects of EQ-TIPS dimensions.

EQ-TIPS dimension	Stunted (n=100)	Healthy (n=100)
Movement	90.0%	93.0%
Play	76.0%	98.0%
Pain	4.0%	68.0%
Relationship	86.9%	84.0%
Communications	80.0%	83.0%
Eating	8.0%	86.0%
No problems in all dimensions ("111111")	1.0%	61.0%

RESULTS

- (Table 3) Overall, EQ-TIPS LSS, VAS, and some dimensions showed acceptable or good KGV when testing for differences based on presence/absence of stunting and medical conditions but did not discriminate well based on number of symptoms.
- (Table 4) In general, the responsiveness of EQ-TIPS scores and most dimensions to improvement during TP1-TP2 and TP1-TP3 ranged between small to large.
- Between TP2 and TP3, LSS and VAS showed small and large responsiveness, respectively. All dimensions showed negligible responsiveness to improvement except eating.

Table 3. Known-groups validity (KGV): Effect sizes (ES) of EQ-TIPS scores and dimensions.

EQ-TIPS scores and dimensions	Healthy children (n= 100) vs. Stunted children (n= 100)	Stunted children with 1-3 symptoms (n=47) vs. ≥4 symptoms (n=52)	Stunted children with (n=87) vs. without medical condition (n=12)
LSS, d	1.44	0.10	0.25
VAS, d	3.98	-	0.22
Movement, delta	0.03	0.03	0.11
Play, delta	0.22	0.05	0.88
Pain, delta	0.64	0.09	-
Relationship, delta	-	0.01	0.05
Communications, delta	0.03	-	0.13
Eating, delta	0.78	-	0.00

Table 4. Responsiveness of EQ-TIPS scores and dimensions to improvement.

EQ-TIPS scores and dimensions	TP1 to TP2 (n=100)	TP2 to TP3 (n=98)	TP1 to TP3 (n=83)
LSS, SES	1.45	0.22	1.60
VAS, SES	1.75	1.20	2.73
Movement, delta	0.08	0.00	0.08
Play, delta	0.21	0.00	0.21
Pain, delta	0.84	0.00	0.83
Relationship, delta	0.07	0.01	0.10
Communications, delta	0.11	0.04	0.15
Eating, delta	0.45	0.24	0.62

SES: Standardized effect size; delta: Cliff's delta

Classification of d, SES			
<0.20: Negligible	0.20 – 0.49: Small	0.50 – 0.79: Moderate	≥0.80: Large
Classification of Cliff's delta			
<0.15: Negligible	0.15 – 0.32: Small	0.33 – 0.46: Moderate	≥0.47: Large

RESULTS

- This study generated some evidence for the construct validity and responsiveness of EQ-TIPS among stunted children aged 36 months or younger in Laos (mainly Play, Pain, Eating).
- Future research is needed to assess other measurement properties of EQ-TIPS in stunted children (e.g. test-retest reliability).

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