Reliability and validity of the Quality of Life Systemic Inventory for Children (QLSI-C): Preliminary result of a modular assessment tool of quality of life using e-Health technologies

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Qualité de vie Enfant (ISQV-E)

INTRODUCTION

Use of generic versus specific tools in psychological assessment is a controversial issue.

- Generic instruments can be used to measure QOL for numerous chronic illnesses; however, they may not be sensitive to some problems unique to particular diseases (Guyatt & Jaeschke, 1990; Tian-hui, Lu, & Michael, 2005);
- Disease-specific measures are more specific and sensitive but they cannot be used to compare results across diseases or conditions (Guyatt & Jaeschke, 1990; Tian-hui, Lu, & Michael, 2005).

The QLSI-C (Etienne, Dupuis, Spitz, Lemetayer & Missotten, 2011) is a quality of life assessment tool for children aged 8 to 12 years that uses a modular approach developed to overcome these shortcomings. Thus, the **generic scale is accompanied by disease-specific modules**

- The theoretical model underlying the QLSI-C is based on this notion of discrepancy and the Aristotelian notion of happiness. In this model, all human activities are oriented towards an end (a goal), that certain ends are subordinated to others but that the ultimate end is the pursuit of happiness (Dupuis et al., 2000). Thus, concepts of goals or expectations are core elements of the QLSI-C. No previous child-focused tool has included these notions (Etienne et al., 2011).

OBJECTIVE

Purpose of this study is to report on reliability and validity of the QLSI-C generic scale and the cystic fibrosis (CF)-specific module.

METHOD

20 children with Cystic Fibrosis (CF) and 20 healthy children (ages 8-12 years) matched by age (M=10,5; SD=1,40) and sex (70% male).

Material and procedure

* **QLSI-C**:
  * Self-report measure for children 8 to 12 years old
  * **QOL** = difference (*gap score*) between the present situation (*state score*) and the child's expectations (*goal score*), weighted by the speed of improvement or deterioration (*Speed score*) and the importance (*rank score*) assigned for each life domain.
  * 20-items generic scale assessing the child's physical, emotional, cognitive, social and family functioning.

Statistical analysis

* **Internal consistency**
  * Cronbach's alphas of the combined generic and CF-specific scale
* **Construct validity of the QLSI-C**
  * The known-groups method, i.e., one-way mutltivariate analysis of variance (MANOVA) were used to distinguish between healthy children and children with CF.
  * Pearson correlations analysis and Intraclass correlation coefficient (ICC) were calculated between the generic scale and CF-specific module.

Development of the CF-specific module

* 6-items CF specific scale assessing the child's health-related QOL have been created based on:
  * Discussion with CF medical teams from Belgium
  * The Cystic Fibrosis Questionnaire Revised (CFQ-R)

Items: generic scale + CF-specific module

1. Sleep	11. Relationship with my brother(s) and sister(s)
2. Food	12. Relationship with my friends
3. Physical pain	13. How my friends talk about me
4. Health	14. School
5. Clothing	15. Grades in school
6. How I look	16. Sports or athletic activities
7. Bedroom	17. After-school activities and hobbies
8. Relationship with my grandparents	18. Autonomy
9. Relationship with my mom	19. Obedience to authority
10. Relationship with my dad	20. Frustration tolerance
21.Emotions and feelings	24. Breathing problems
22. Time spent on treatment	25. Other health problems related to the disease
23. Physical abilities	26. Relationship with health-care staff

RESULT

	Descriptive statistics			Reliability	Construct validity						
	N	M	SD	α	Df	Mean Square	F	p	Pearson r	p	ICC
QLSI-C STATE				.88	1,38	821.157	5.463	.025*	.83	<.001	.91
CF group	20	22.46	2.74								
Control group	20	13.40	2.74								
QLSI-C GOAL				.91	1,38	.360	.011	.918	.70	.001	.74
CF group	20	7.41	1.29								
Control group	20	7.22	1.29								
QLSI-C RANK				.88	1,38	.054	2.663	.111	.82	<.001	.88
CF group	20	1.69	0.03								
Control group	20	1.62	0.03								
QLSI-C GAP				.81	1,38	96.373	8.890	.005*	.47	.035	.65
CF group	20	4.35	0.74								
Control group	20	1.25	0.74								

DISCUSSION

- **Analyses support the internal consistency reliability** of the QLSI-C with the CF-specific module
- **QLSI-C differentiated QOL in healthy children** as a group in comparison **to children with CF** as a group.
- Intercorrelations with scores of generic and CF-specific scales demonstrated medium to large effect, **supporting the validity of the QLSI-C**

To date, three specific modules are available for the QLSI-C: (1) cancer; (2) asthma; (3) cystic fibrosis. Originality of this tool is strengthened by use of e-Health technologies (i.e., iPad app for administering the QLSI-C). Satisfactory psychometric properties and state-of-the-art use of technology suggests that the QLSI-C has potential utility for use in clinical trials, research, and clinical practice.

References

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