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Pilot Testing of the Greek Version of the PedsQL 4.0 Instrument

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Introduction

This report discusses patient testing of Greek PedsQL (Pediatric Quality of Life Inventory™) version. The PedsQL 4.0 Measurement Model is a modular approach to measuring health-related quality of life (HRQoL) in healthy children and adolescents and those with acute and chronic health conditions¹.

Forward and backward translations of the Greek version of PedsQL have been accomplished. A pilot study has now been launched to evaluate the semantics and linguistic adaptation into Greek.

Following Mapi Research Institute’s procedure², a pretest should be based on a sample of around 35 individuals, children and adults. Five children self-report and parent proxy-report respondents in each age range [2-4, 5-7, 8-12, 13-18 years] are required to ensure confidence in the linguistic and conceptual equivalence of the translation from the respondent’s perspective.

A sample of 60 individuals was drawn from different educational and socioeconomic backgrounds³. The aim was to obtain a sample of almost twice the suggested size.

Participants-Method

The panel consisted of 60 subjects, all native speakers of Greek, aged from 5 to 50 years old. We interviewed 7 children aged 5-7 year old (4 male and 3 female), 7 children 8-12 years old (3 male and 4 female), 12 adolescents 13-18 years old (5 male and 7 female) and their parents: 10 parents of children 2-4 years old (4 male and 6 female), 6 parents of children 5-7 years old (3 male and 3 female), 7 parents of children 8-12 years old (3 male and 4 female) and 11 parents of children 13-18 years old (4 male and 7 female). Special efforts were made during the sample procedure to ensure participation of children and parents from various age groups, educational levels and socio-economic backgrounds⁴, by interviewing children (and their parents) from one private school (and kindergarten) and two public schools, one in a rural and in an urban area. As the parents who participated were selected randomly and from different areas, their educational level could not be the same.

The average age of parents⁵ was 26.2 years old for parents of children 2-4 years old, 37.3 years old for parents of children 5-7 years old, 39.1 for parents of children 8-12 years old and 43.7 for parents of children 13-18 years old (Table 1).

After a brief introduction to the concept of the research⁶, the children and their parents were asked to complete the PedsQL 4.0 questionnaire separately in a quiet and friendly environment, following PedsQL™ Administration GuidelinesSM. Children were interviewed for the child self report forms and parents for the parent proxy forms. Some parents of 5-7 years old believed they should be present when their children answered the questionnaire.

The 23-item PedsQL 4.0 Generic Core Scales⁷ were designed to measure the core dimensions of health as delineated by the World Health Organization⁸, as well as role (school) functioning. The four Multidimensional Scales and the three Summary Scores are summarized in Table 2. Following completion, the Cognitive Interviewing methodology⁹ was used. Cognitive Debriefing is a qualitative method for assessing respondents’ interpretation of the questions, by administering the harmonized translation to a sample of native speakers and conducting in-depth interviews with each of the subjects. The background theory

underlying cognitive interviewing consists of: comprehension of the question (question intent, meaning of terms), retrieval of memory of relevant information (what types of information does the respondent need to recall, what types of strategies are used to retrieve information?), decision processes (does the respondent devote sufficient mental effort to answer accurately and thoughtfully, does he want to tell the truth or something that makes him look better?) and response processes (can the respondent match is answer to the response categories given?). There are two major subtypes of cognitive interviewing: the Think Aloud Method¹⁰ and Verbal Probing techniques. The Think Aloud interview derives from psychological procedures described by Erickson and Simon (1980). Subjects are instructed to think aloud as they answer the survey questions. Therefore freedom from interviewer-imposed bias, minimal interviewer training requirements and useful information given by the subject are gained.

As an alternative to the Think Aloud, the use of Verbal Probing¹¹ is the basic technique that has increasingly come into favor by cognitive researchers. Basic categories of cognitive probes are: comprehension/interpretation probe, paraphrasing, general probes (how did you arrive at the answer? was that easy or hard to answer? I noticed that you hesitated, tell me what you were thinking) and others. Thus, the interviewer can focus on particular areas that appear to be relevant as potential sources of response error.

Based on both the General Probing¹¹ and the Think Aloud Method¹⁰, a face to face interview was conducted regarding the following topics:

- a) What items were difficult to answer,
- b) What questions were confusing and why,
- c) Where was the understanding difficult,

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Table 1. Age structure of the parents’ groups

	Age (mean)
Parents of children 2-4 years old	26.2
Parents of children 5-7 years old	37.3
Parents of children 8-12 years old	39.1
Parents of children 13-18 years old	43.7

Table 2. The four Multidimensional Scales and the three Summary Scores of the PedsQL 4.0

Scales	Summary Scores
Physical Functioning (8 items)	Total Scale Score (23 items)
Emotional Functioning (5 items)	Physical Health Summary Score (8 items)
Social Functioning (5 items)	Psychosocial Health Summary Score (15 items)
School Functioning (5 items)	

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Table 3. Scores of the pretest panel for each dimension of the PedsQL.

Summary Scores	Parents of children 2-4 years old	Group of ages 5-7 years old		Group of ages 8-12 years old		Group of ages 13-18 years old	
		Parents	Children	Parents	Children	Parents	Children
Total Scale Score (23 items)	71.7	83.2	78.89	66.71	73.67	80.33	76.6
Physical Health Summary Score (8 items)	78.43	78.56	75.89	67	75.45	82.8	76.87
Psychosocial Health Summary Score (15 items)	65	87.85	81.9	66.43	71.9	77.86	77.86

Table 4. Time for questionnaire completion for each pilot testing group.

Age group	Parents	Children
2-4 years old	3-6 min	
5-7 years old	3-6 min	10-15 min
8-12 years old	3-6 min	5-10 min

d) What items were interpreted differently by the respondents, because of confusion with the overall meaning of the item, as well as interpretation of individual terms and concepts,
e) Suggestions for alternative ways to ask the questions.

During the cognitive debriefing analysis¹², two English teachers with experience in similar psychometric test surveys in school classes were actively involved in the whole project, by revising the participants' difficulties and inquiries during questionnaire completion. Translation alternatives and explanations to some questions were then proposed and the final form was reported to the author of PedsQL, who helped identify the items where some alternatives could be tried.

Results

The respondents provided useful answers in the PedsQL, responding to each of the 3-dimensional classification categories. The relative frequencies of each dimension are shown in Table 3.

Time of questionnaire completion ranged from 15 minutes for small children to 5 minutes for adolescents. (Table 4)

The participants were interviewed in a period of three weeks.

The panel members had no difficulty in answering the questionnaire. However, some reported a few slightly confusing elements. Specifically the points brought up that we had to further discuss and clarify with the author of PedsQL¹³ were:

- The first question about walking more than a block (*μου είναι δύσκολο να περπατώ περισσότερο από ένα*

οικοδομικό τετράγωνο) was difficult to answer for 5 children 8-12 years old (71,4%). They preferred an example, such as "walking around the schoolyard" (*μου είναι δύσκολο να κάνω του γύρο του σχολείου περπατώντας*) or "to walk more than 100 meters".

- In the question about running 4 children 8-12 years old (57.1%) answered that they find it hard "to run fast or a great distance".

- Eight parents of children 2-4 years old (80%) replied that they seldom let their children lift something heavy (*είναι δύσκολο στο παιδί σας να σηκώνει κάτι βαρύ*) and it was clarified that the idea is to lift something heavy for their age.

- In the question "I hurt or ache" (*πονάω*) 15 children (60%) and 9 parents (25,7%) asked "ache where?". They needed an example "Where?"- "How often?". The common feeling seemed to be that the wording of the question should be more precise.

- In the question about having low energy (*έχω χαμηλή ενεργητικότητα*) 3 parents (30%) found it hard to define what "low energy" means for children aged 2-4 years old and 4 children of 8-12 years old (66.7%) did not understand the question. They needed some examples, such as "I feel too tired to play or to do my homework" (*νιώθω πολύ κουρασμένος για να παίξω ή να διαβάσω*).

- In the question about sleep (*δυσκολεύομαι στον ύπνο*) 2 children aged 2-4 years old (20%), 1 (16,6%) parent of children 5-7 years old and 3 children aged 8-12 years old (42,85%) were troubled about this question: having problems in falling asleep or waking-up many times at night? Once again, the question is meant to be applied to a broad range of sleeping problems.

- Four parents of children 2-4 years old (40%) found it difficult to understand if their child "worries" (*να ανησυχεί*). They were instructed that if a participant is not sure about an item it can be left blank.

- Six (24%) children of all age groups and 9

(25,7%) parents of all groups needed more information about the question on keeping up with the other children (*να ακολουθεί σε όλα τα άλλα παιδιά*) and we had to clarify that this question refers to play.

- Finally, a teenager claimed that the answers should involve both sexes. In the Greek language the sentence "I feel sad" for example has a different end if it refers to a man than to a woman; it was clarified that the use of the male forms of adjectives (and possibly other semantic items) refers to both genders.

Discussion

The results of the above test confirmed the feasibility of administering the Greek version of PedsQL¹⁴. It has a clear focus and is concise.

Although some items could be rephrased in more understandably, the translation of the questionnaire into Greek was reported from the majority of members of the pilot sample to be easy to understand and was adequately adapted to the Greek culture. Nevertheless, because further testing is required before the instrument is widely made available, our next step is a field study in Greece¹⁵, in order to create a fully harmonized Greek version of PedsQL, which could be valuable for Greek pediatricians¹⁶ and should provide us with an index of quality of life in Greece generally, today and tomorrow, as children are the present and future of our society. ●

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- Varni JW, Seid M, Rode CA. The PedsQL: Measurement Model for the Pediatric Quality of Life Inventory. *Medical Care* 1999;37(2):126-139.
- The MAPI Linguistic Validation Process provided on the web-site <http://www.mapi-research-inst.com/lvprocess.asp>
- Starfield B, Riley AW, Witt WP et al. Social class gradients in health during adolescence. *Journal of Epidemiology and Community Health* 2002;56:354-361.
- Mansour ME, Kotagal U, Rose B et al. Health-Related Quality of Life in Urban Elementary Schoolchildren. *Pediatrics* 2003;111(6):1372-81.
- Eiser C, Morse R. Can parents rate their child's health-related quality of life? Results of a systematic review. *Quality of Life Research* 2001;10(4):247-57.
- Simeoni MC, Auquier P, Delarozziere JC et al. Evaluation of the quality of life in children and adolescents. *Presse Med* 1999;28(19):1033-9.
- Varni JW, Seid M, Kurtin PS. The PedsQL 4.0: Reliability and validity of the Pediatric Quality of Life Inventory Version 4.0 Generic Core Scales in healthy and patient populations. *Medical Care* 2001;39(8):800-812.
- Patrick DL. Quality of Life. Three words with many meanings. *Washington Public Health-Fall* 1997;15.
- Campanelli P. Testing survey questions: New directions in cognitive debriefing. *Bulletin de Methodologie sociologique* 1997;55:5-17.
- Davison GC, Vogel RS, Coffman SG. Think-aloud approaches to cognitive assessment and the articulated thoughts in simulated situations paradigm. *J Consult Clin Psychol* 1997;65(6):950-8.
- Willis GB, Royston P, Bercini D. The use of verbal report methods in the development and testing of survey questionnaires applied. *Cognitive Psychology* 1991;5:251-267.
- MOT Translation Criteria, Medical Outcomes Trust, July 1997 Bulletin; <http://www.outcomes-trust.org/bulletin/0797bull.htm>
- Varni JW, Burwinkle TM, Seid M, et al. The PedsQL 4.0 as a pediatric population health measure: Feasibility, reliability, and validity. *Ambulatory Pediatrics* 2003;3:329-341.
- Herdman M, Fox-Rushby J, Badia X. Equivalence and the translation and adaptation of health-related quality of life questionnaires. *Quality of Life Research* 1997;6:237-247.
- Ravens-Sieberer U, Gosch A, Abel T et al. European Kidscreen Group. Quality of life in children and adolescents: a European public health perspective. *Soz Präventivmed* 2001;46(5):294-302.
- Varni JW, Seid M, Knight TS, Uzark K et al. The PedsQL 4.0 Generic Core Scales: Sensitivity, responsiveness, and impact on clinical decision-making. *Journal of Behavioral Medicine* 2002;25:175-193.