

Children

Structured review

Instruments for Children and Adolescents: a Review

National Centre for Health Outcomes Development, University of Oxford
Patient-reported Health Instruments Group (*formerly the Patient-Assessed Health Outcomes Programme*)
Report to the UK Department of Health July 2001

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Executive Summary

Background

This report presents a review of multi-dimensional generic measures of child/parent-reported health outcomes (encompassing functional, health status, and health-related quality of life measures) for use with general populations of children and adolescents. It also highlights the major methodological issues to be considered when carrying out such assessments in this population. The review will provide information to guide potential users in the selection and appropriate use of instruments.

Research Aims

- to highlight methodological issues in assessing subjective health outcomes among children and adolescents;
- to identify published reviews of such instruments;
- to identify relevant generic measures;
- to present the existing evidence on the properties of relevant generic instruments, including reliability and validity;
- to make recommendations regarding the selection of individual instruments.

Methods

Relevant literature was identified using the PAHOP database which has been designed to capture electronically-held references relating to self-reported health outcome measures. In addition, key sources were hand-searched. The PAHOP database was searched for references relating to children or adolescents; the abstracts were then assessed against inclusion criteria.

After retrieving relevant references, the following information was extracted:

- the purpose and content of the instrument;
- instrument development and scoring;
- population samples in which the instrument was developed and tested;
- measurement properties: reliability, validity and acceptability.

Key Findings

The literature search identified ten reviews of instruments for use with children or adolescents, none of which focussed on applications at the population level. One comprehensive and systematic review of measures for children with chronic diseases was identified.

16 generic and multi-dimensional instruments which had been evaluated in a general population of children or adolescents were identified. Three of these had been developed in the UK. Most instruments cover the three main areas of physical, social and mental health and well-being; some also address school achievement, family functioning and risk-taking behaviour.

Several child-completed instruments were identified for use with young children (from the age of six), although parent-completed measures were common for this and younger age-groups. For older children (aged 11 and over), the majority of instruments identified were self-completed. Four parent-completed instruments can be used with children under one year old, whilst child-completed instruments have been developed for children as young as four.

Only five instruments have reported data on both internal consistency and test-retest reliability in general populations. All except two instruments have undergone some testing for construct validity. Various formats, including storybook pictures or computer presentations, have been used in an attempt to reduce the response burden on children.

The major methodological issues to be considered when measuring child/parent-reported health outcomes are as follows:

- there is a lack of standardisation in the conceptualisation and operationalisation of health-related quality of life in the young;
- instruments developed for use with adults are less likely to be appropriate for use with children and adolescents;
- population-based approaches tend to broaden concepts of health and well-being to include school achievement, family functioning and self-esteem;
- domains measured by instruments need to be developmentally and culturally appropriate;

- children are likely to be able to provide self-reports if the instrument is appropriate to their abilities, although the exact age from which this is possible is subject to debate and may vary according to domains;
- data from proxies (usually parents) is likely to differ from that gathered from children themselves. Further investigation of this is required, using instruments that allow for parallel child- and parent-reporting.

Key conclusions and recommendations

All instruments require further validity and/or reliability testing in UK populations, and this should take place alongside any application of instruments. We recommend that difficulty be assessed whenever instruments are administered.

In choosing a particular instrument, the nature and design of the instrument should be assessed against the prospective application. One needs to be clear whether a parent- or child-response is preferred, which domains are of most relevance, and what degree of prior testing of the instrument is acceptable.

For younger populations, the CHQ-PF50 has been the most extensively evaluated but is available as a parent-completed measure only. Two of the UK measures are child-completed measures designed for young children, although at present insufficient evidence is available for their psychometric properties. Where younger children are asked to complete measures, this should, ideally, be accompanied by parallel proxy assessments (usually by parents). For this reason the new CHIP-CE seems particularly promising, as child- and parent-completed versions are available for children from a young age, although validity evidence is not expected to be presented until the Autumn of 2001.

For older children, the weight of evidence suggests the CHQ-CF87 and the CHIP-AE. The main drawback to both of these instruments is their length, although a shortened version of the CHQ-CF87 is under development.

If one is interested in health service utilisation and the uptake of services, the UK-developed Warwick Child Health and Morbidity Profile would be the most appropriate.

A table with a summary description of the instruments reviewed follows.

**** Further information regarding reviews of instruments, analysis of individual measures, and recommendations can be found by referring to a full copy of the report, available in PDF format on the [PHI Group website](#) ****

Description of instruments reviewed

(from Tables III and IV of the report)

recommended instruments

Instrument	Aim/intended application	Dimensions (no. of items)
<p>Child Health and Illness Profile/CHIP-AE</p> <p><i>Modified CHIP-AE</i></p>	<p>To document state of health in adolescent populations, identify differences in health of sub-populations, assess impact of health service interventions on health, make initial assessment of adolescents for screening services.</p> <p><i>Modified CHIP-AE is specifically modified for assessing adolescent health behaviours to inform school health programme planning.</i></p>	<p>Satisfaction with health - overall health and self-esteem (12); discomfort - physical and emotional symptoms, limitations of activity: boys (44), girls (45); achievement - academic and work performance (11); risks - individual risks, threats to achievement, peer influences (39); resilience - family involvement, problem-solving, physical activity (20); disorders – conditions (45); home safety and health (12)</p> <p>CHIP taxonomy: satisfaction, discomfort, risks and resilience</p> <p><i>Modified CHIP-AE excludes limitations of activity, work performance, home safety and health, recurrent disorders, long-term medical and surgical disorders, psychosocial disorders.</i></p>
<p>Child Health Questionnaire/CHQ - parent-completed</p>	<p>To measure and compare health of general and specific groups of children; to evaluate treatments.</p>	<p>General health perceptions (6); physical functioning (6); bodily pain (2); role/social-physical (2); role/social-emotional-behavioural (3); mental health (5); behaviour (6); self-esteem (6); parental impact-emotional (3); parental impact-time (3); family activities (6); family cohesion (1); change in health (1)</p>
<p>Child Health Questionnaire/CHQ - child-completed</p>	<p><i>as above</i></p>	<p>General health perceptions (12); physical functioning (9); bodily pain (2); role/social-physical (3); role/social-emotional (3); role/social-behaviour (3); mental health (16); behaviour (17); self-esteem (14); family activities (6); family cohesion (1); change in health (1)</p>
<p>Child's Health Self-Concept Scale/CHSCS</p>	<p>Potential use for nursing research and practice.</p>	<p>Psychosocial (13); physical health (8); healthiness (3); values (5); energy (5)</p>
<p>Children's Health Rating Scales</p>	<p>Self-report of general health in children for group comparisons or multivariate analyses.</p>	<p>Current health quality (3); current illness state (3); current comparative health (3); resistance to illness (5); health outlook (3)</p>
<p>Child Health Status Questionnaire</p>	<p>Measure of child health status suitable for testing hypotheses about health-care financing and health status.</p>	<p>Physical health (13 for 5-13 yrs, 5 for 0-4 yrs); mental health (12 for 5-13 yrs); social relations (3 for 5-13 yrs); general health (7 for 0-13 yrs); satisfaction with development (4 for 0-4 yrs)</p>
<p>Comprehensive Quality of Life Scale/ComQOL</p>	<p>Assessment tool covering subjective and objective domains of life for research and applied purposes.</p>	<p>Material well-being (5); health (5); productivity (5); intimacy (5); safety (5); place in the community (5); emotional well-being (5)</p>
<p>Dartmouth COOP Functional Health Assessment Charts</p>	<p>Survey instrument for evaluating treatment outcomes and detecting important problems, for use in the classroom or physician's office.</p>	<p>Physical (1); emotional (1); school work (1); social support (1); family communications (1); health habits (1)</p>

Exeter Quality Life Measure/Exqol	Computer-delivered measure of quality of life for children based on experience with chronically ill children.	<i>Note: dimensions yet to be proposed by instrument's author; grouped in this report as a guide only</i> Symptoms - sleep, aches, food allergies, sickness (4); social well-being (2); school achievements (1); physical activity (3); worry (1); family relationships (1)
Functional Status II(R)	Can measure health status of children across wide age-range; especially suitable for children with chronic physical conditions who are not disabled.	General health (15) ; hospitalisations (3); age-specific behaviour >1 year-old (5), 1 year old (13), >2 years old (23); short version:14 items for all
Generic Children's Quality of Life Measure/GCQ	Allows comparison between chronically ill children and the general child population.	General affect - worry, happiness (6); peer relationships (5); attainments (4); relationship with parents (4); general satisfaction (1); support (2); health/appearance (3)
Instrument for monitoring adolescent health issues	Survey instrument to monitor health status and health-related behaviour in secondary school students.	<i>Note: not possible to group items on the information given</i> Tobacco use; alcohol use; other substance abuse; leisure; sun exposure; injury; dietary habits exercise and fitness; sexual health; mental health; violence; safety
Juvenile Wellness and Health Survey/JWHS-76	School-based screening tool to assess general and mental health in adolescents.	General risk taking (17); mental health problems (10); sex-related risks (17); eating and dietary problems (7); general health problems (11); other (<i>note: items do not form a coherent factor</i>) (14)
Pediatric HealthQuiz	Screen for potential child health problems, including psychosocial, accident prevention and home safety issues. Could be used at population level, or for evaluation of interventions, especially preventative.	Medical - pregnancy, perinatal health, child development, past illnesses, operations, accidents, symptoms, family history (200); preventative - family relationships, nutrition, preventive health-care, psychosocial issues such as mental illness, behavioural and educational problems (175)
Pictorial Scale of Perceived Competence and Social Acceptance for Young Children	Scores may be useful in determining behaviour and motivations, and for assessing sub-groups of children under different types of stress.	Cognitive competence (6); physical competence (6); peer acceptance (6); maternal acceptance (6)
Quality of Life Profile-Adolescent Version	To assess coping and functioning, identify service needs, develop health-enhancing environments, assess effects of illness and treatment.	Physical being (6); psychological being (6); spiritual being (6); physical belonging (6); social belonging (6); community belonging (6); practical becoming (6); leisure becoming (6); growth becoming (6)
Warwick Child Health and Morbidity Profile	Measure of health and morbidity suitable for research, service-planning, measuring cross-sectional and longitudinal health and morbidity.	General health status (1); acute minor illness status (1); behavioural status (1); accident status (1); acute significant illness status (1); hospital admission status (1); immunization status (1); chronic illness status (1); functional health status (1); health-related quality of life (1)

Reviewed instruments and associated links

recommended instruments

* = link available

[Child Health and Illness Profile-Adolescent Edition/CHIP-AE*](#)

Modified CHIP-AE

[Child Health Questionnaire/CHQ*](#)

Child's Health Self-Concept Scale/CHSCS

Children's Health Rating Scales

Child Health Status Questionnaire

Comprehensive Quality of Life Scale/ComQOL

[Dartmouth COOP Functional Health Assessment Charts*](#)

Exeter Quality Life Measure/Exqol

Functional Status II(R)

Generic Children's Quality of Life Measure/GCQ

Instrument for monitoring adolescent health issues

Juvenile Wellness and Health Survey/JWHS-76

Pediatric HealthQuiz

Pictorial Scale of Perceived Competence and Social Acceptance for Young Children

Quality of Life Profile-Adolescent Version

[Warwick Child Health and Morbidity Profile](#)

Related publications

Schmidt LJ, Garratt AM, Fitzpatrick R. (2002) Child/parent-assessed population health outcome measures: a structured review. *Child: Care, Health and Development*; 28:227-238.

User Groups

Work in progress

AM

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**These pages are under constant review.
We welcome constructive feedback and suggestions for appropriate
links, user groups etc.**