Measure: PROMIS Pediatric Global Health Measure (PGH-7)

Measure Developer: The Children's Hospital of Philadelphia PQMP Center of Excellence

Numerator	Denominator	Exclusions	Data Source(s)

The sum of the measure scores across all individuals in the group.	The number of individuals in the target population.	Numerator and Denominator Inclusions/Exclusions
		
		– For the child self-report measure:
		  – Children ages 8-17 years are included.
		  – Children with cognitive limitations or developmental delays preventing them from providing self-report, such as autism, intellectual development disability, mental retardation, or severe learning disabilities, are excluded.
		– For the parent-proxy measure:
		  – Parents of children ages 5-17 years are included.
		  – Parents of children with cognitive limitations or developmental delays preventing them from providing self-report, such as autism, intellectual development disability, mental retardation, or severe learning disabilities, are excluded.
			Self-reported or proxy-reported questionnaire that can be administered using paper-pencil forms, Web-based forms that store data in electronic health records, free-standing Web-based data collection sites, registries, or patient health records

Measure Importance

Assessing the outcomes of health care interventions on children and families from their point of view is of great clinical importance. Despite a proliferation of measures, the use of child-reported outcome tools in clinical trials or quality improvement applications has been limited.[1]

The most commonly used global health item asks respondents to rate their overall health in general. This single indicator has been associated with future health[2] and health care utilization[3] in a large number of studies. The widespread use of the general health item stems from its ease of administration, applicability across the lifespan, and public domain availability. Its major limitation is lack of variation within an individual over time or within a population, particularly in children whose self-reported assessments have substantial ceiling effects, which limits its usefulness as a measure to detect change or describe small differences between individuals and populations. Additionally, virtually all of the existing pediatric measures were not developed as part of a life course global health assessment system that could assess comparable content among pediatric and adult populations.

The integration of patient-reported outcomes (PROs) into an overall performance measurement strategy, whereby PRO data are aggregated for an accountable health care entity or geopolitical unit, is highly congruent with aspirations for moving toward a value-driven health care system.[4]

Evidence Base for the Focus of the Measure[5]

There is no longer a debate regarding children's ability to self-report on their health and health-related experiences. Theoretical[6] and qualitative[7,8] assessments of the cognitive skills necessary for self-report show that children as young as 8 years of age can accurately respond to developmentally appropriate questions on their feelings, functioning, perception, and well-being.

Global health is associated with socioeconomic status, presence of a chronic condition, and insurance status. Our known-group validation work confirms and expands on group differences in general health. Thus, the PGH-7 can be useful for evaluating quality within and across many conditions and demographics.[9]

Finally, with the emergence of the Patient Centered Outcomes Research Institute (PCORI) and renewed emphasis on dissemination and implementation of patient-centered outcomes research findings at AHRQ[10] and across the public sector, new measures of outcomes from the individual's perspective are needed. The PGH-7 is such a measure.

Advantages of the Measure

- The measure fills a significant gap, person-reported outcomes, in pediatric quality measurement.

- Brevity of the PGH-7 lowers respondent burden and increases efficiency. It takes children, youth, and parents no more than 1–2 minutes to complete.

- The measure provides a great range of variability and is likely to be responsive to changes in health that result from health care interventions or naturally occurring circumstances.

- It is a comprehensive assessment of physical, social, and mental health.

- The measure is highly inclusive. It is not based on the segmentation of the pediatric population by a condition; rather, it is a cross-cutting measure that provides an evaluation of overall health regardless of disease or other clinical category.

- The PGH-7 has excellent reliability.

- The measure is valid, using several measures of validity.

Levels of Aggregation Applicable to the Measure

This measure is applicable at all system levels, from individual patients to the Nation as a whole.

Reliability and Validity of the Measure

- Measure reliability is excellent: it was assessed using internal consistency alpha and intraclass correlation coefficients from a test-retest sample. The internal consistency alpha for the child sample was 0.88 and 0.84 for the parent sample. The test-retest reliability coefficients were 0.73 for child report and 0.74 for parent-proxy report.

- The measure exhibits uni-dimensionality, showing structural validity.

- Cognitive interviews, literacy analyses, and translatability review demonstrated adequate comprehensibility, showing content validity.

- The measure also demonstrated excellent convergent and discriminant validity with other PROMIS pediatric measures and legacy measures. Higher global health scores were associated with better physical functioning, higher levels of subjective well-being, better social health, and lower physical and emotional distress. Association was highest with social health (child 0.58 to 0.67; parent-proxy 0.48 to 0.66) and subjective well-being measures (child 0.73-0.79; parent-proxy 0.69 to 0.80). The PGH-7 was also well correlated with the KIDSCREEN-10 (0.69) and PedsQL (0.68) measures.

Measure Testing

Data were collected from several samples:

1. National sample of children and youth aged 8-17 years (n=4,636) and parents of children aged 5-17 years (n=2,609) collected from an Internet panel company (Op4G).

2. National sample of children for a test/retest administration (n=334 children and n=254 parents) from an Internet panel company (Op4G).

3. Locally recruited cognitive interview samples (n=20 children, 15 parents).

Selected Results from Disparities Analyses Using the Measure

- The measure detects disparities among categories/groups: race, ethnicity, household income, chronic condition, insurance status, and parental education. For example:

- Children who are black/African-American have lower global health scores than whites.

- Children who are of Hispanic ethnicity have lower global health scores than non-Hispanics.

- Children with a chronic condition have lower global health scores than children without a chronic condition.

- Children with low family income have lower global health scores than children with a higher family income.

Caveats

- PGH-7 does not measure specific need; the PGH-7 score does not indicate the need for a specific service. It is best used as an assessment of the end-results of a quality improvement activity or as a measure of patient mix.

- PGH-7 measures health at a high level: The measure evaluates global health, which is the highest level of self-reported health possible, integrating patient experiences of their health across physical, mental, and social health dimensions. In some applications, a user may prefer to evaluate physical, mental, or social dimensions more specifically.

- Age limitations: The measure does not address the health of children aged 0-4 years.

- More work is required to assess responsiveness: The measure requires longitudinal evaluation to assess its responsiveness to change in clinical settings. This work is in progress.

More Information

- AHRQ: CHIPRAqualitymeasures@ahrq.hhs.gov

- CHOP: Christopher Forrest; forrestc@email.chop.edu

- Coming soon: Link to measure details on the AHRQ Web site.

For more information about the PQMP, visit www.ahrq.gov/CHIPRA

Notes

[1]Clarke SA, Eiser C. The measurement of health- related quality of life (QOL) in pediatric clinical trials: a systematic review. Health Qual Life Outcomes 2004; 2:66.

[2]DeSalvo KB, Bloser N, Reynolds K, et al. Mortality prediction with a single general self-rated health question. A meta-analysis. J Gen Intern Med 2006; 21(3):267–75.

[3]DeSalvo KB, Fan VS, McDonell MB, et al. Predicting mortality and healthcare utilization with a single question. Health Serv Res 2005; 40(4):1234–46.

[4]Deutsch A, Smith L, Gage B, et al. Patient-reported outcomes in performance measurement. Washington, DC: National Quality Forum; 2013. Available at: http://www.qualityforum. org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=71827. Accessed 9 July 2013.

[5]An evidence base comprises the breadth and rigor of studies demonstrating valid relationship(s) among the structure, process, and/or outcomes of health care that are the focus of the measure. For example, evidence exists for the relationship between immunizing a child or adolescent (process of care) and improved outcomes for the child and the public. If sufficient evidence existed for the use of immunization registries in practice or at the State level and the provision of immunizations to children and adolescents, such evidence would support the focus of a measure on immunization registries (a structural measure).

[6]Bevans KB, Riley AW, Moon J, et al. Conceptual and methodological advances in child-reported outcomes measurement. Expert Rev Pharmacoecon Outcomes Res 2010; 10(4):385–96.

[7]Rebok G, Riley A, Forrest C, et al. Elementary school-aged children's reports of their health: a cognitive interviewing study. Qual Life Res 2001; 10(1):59–70.

[8]Irwin DE, Varni JW, Yeatts K, et al. Cognitive interviewing methodology in the development of a pediatric item bank: a patient-reported outcomes measurement information system (PROMIS) study. Health Qual Life Outcomes 2009; 7:3.

[9]Forrest CB, Bevans KB, Pratiwadi R, et al. Development of the PROMIS pediatric global health (PGH-7) measure. Qual Life Res 2013; 23(4):1221-31.

[10]Agency for Healthcare Research and Quality. PCOR dissemination, translation, and implementation goals. Available at www.ahrq.gov/news/events/nac/2011-11-nac/slutsky/slutskysl4.html.

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