

Review Article

EuroQol 5-Dimension 5-Level Youth Version as a Measure of Health-Related Quality of Life in Pediatric Patients: A Review

Amit Agrawal

From ¹Associate Professor, Department of Pediatrics, Gandhi Medical College, Bhopal, India.

ABSTRACT

Measuring health-related quality of life (HRQoL) is increasingly important in pediatric clinical research, pharmacotherapy, health technology assessment, and patient-centered care. The EuroQol 5-Dimension 5-Level Youth Version (EQ-5D-Y-5L) is a youth-specific, generic, preference-based health-status instrument that describes health across five dimensions: mobility, looking after myself, doing usual activities, having pain or discomfort, and feeling worried, sad, or unhappy, using five response levels, together with a visual analogue scale. This review summarizes the development of the EQ-5D-Y-5L and critically examines evidence on feasibility, content validity, reliability, construct validity, informativity, responsiveness, proxy reporting, cross-cultural adaptation, and emerging valuation research. The available evidence indicates that the five-level instrument is understandable to children and adolescents and generally provides greater descriptive discrimination than the three-level version. Head-to-head studies have reported reduced ceiling effects and improved informativity with the 5-Level Youth Version (Y-5L), although performance varies by population, reporter, and outcome. Evidence in intellectual disability, juvenile idiopathic arthritis, scoliosis, psychiatric care, and cardiovascular disease supports construct validity, while reliability and responsiveness remain less consistent across settings. Valuation is an active methodological area, and emerging adolescent and adult preference studies indicate that perspective and age may influence stated preferences. The EQ-5D-Y-5L is therefore a useful generic pediatric HRQoL measure, but selection should be guided by the clinical population, purpose of measurement, reporter, and availability of appropriate value sets.

Key words: Child, Adolescent, Quality of Life, Health Status, Patient-Reported Outcome Measures, Psychometrics, Surveys and Questionnaires, Health Care Quality, Access and Evaluation, Drug Therapy.

Health-related quality of life (HRQoL) captures aspects of health that may not be represented adequately by physiological measures, disease activity scores, or treatment utilization. In children and adolescents, measurement is particularly challenging because health concepts, language, functional expectations, and the ability to report symptoms change with age. A pediatric instrument must therefore be understandable to the child while also covering health domains that are relevant across different diseases and treatment settings. The original EuroQol 5-Dimension Youth Version (EQ-5D-Y) was developed as a child-friendly adaptation of the adult EuroQol 5-Dimension (EQ-5D) to address these requirements. Its development studies showed that wording needed to be changed substantially to improve comprehension and relevance for younger respondents [1,2].

The EuroQol 5-Dimension 3-Level Youth Version (EQ-5D-Y-3L) contains five dimensions with three severity levels. Although widely used, the three-level structure can compress responses into broad categories and produce ceiling effects when many children report no problems. The EuroQol 5-Dimension 5-Level Youth Version (EQ-5D-Y-5L) was developed to increase response granularity by providing five levels in each dimension. Multinational development work found that children generally preferred the five-level version over a four-level alternative, supporting its feasibility as an age-appropriate descriptive system [3,4]. Subsequent cognitive testing examined how children interpret severity qualifiers and provided additional evidence that the expanded response structure can be understood by the target population [5].

Access this article online

Received – 29th July 2026Initial Review – 4th August 2026Accepted – 28th August 2026

DOI: 10.32677/ijch.v13i9.8500

Quick Response Code



Correspondence to: Dr. Amit Agrawal, MD, Associate Professor, Department of Pediatrics, Gandhi Medical College Bhopal, India .
Email: agrawaldramit@yahoo.co.in.

© 2026 Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC-ND 4.0).

The clinical importance of the EQ-5D-Y-5L extends beyond descriptive health measurement. Because the EQ-5D family is designed as a generic instrument, it can be used across diseases and interventions and can potentially support economic evaluation. For pharmacy practice, this is relevant when pharmacists assess treatment outcomes, medication-related morbidity, adherence interventions, adverse effects, or the patient-centered impact of pharmacotherapy. The present review therefore focuses on the evidence supporting the EQ-5D-Y-5L as a pediatric HRQoL measure and identifies areas in which further research is required.

2. INSTRUMENT DEVELOPMENT AND STRUCTURE

The EQ-5D-Y was created by adapting the adult EQ-5D language and concepts for children and adolescents. The initial international development study demonstrated that the underlying dimensions could be retained, but that wording and response options required age-appropriate modification [1]. A subsequent multinational study evaluated feasibility, reliability, and validity and supported use of the youth version in children and adolescents [2]. These studies established the conceptual foundation for a generic pediatric instrument while also highlighting the importance of age and respondent type. The EQ-5D-Y-5L retains five dimensions: mobility; looking after myself; doing usual activities; having pain or discomfort; and feeling worried, sad or unhappy. Each dimension has five ordered severity levels. The instrument also includes an EQ visual analogue scale (EQ VAS), which asks respondents to rate their overall health. Researchers developed the five-level revision through qualitative and quantitative work in Germany, Spain, Sweden, and the United Kingdom. In the development study, 255 sorting and response-scaling interviews were used to identify appropriate severity labels, followed by cognitive testing; the five-level version was preferred by 68–88% of participants across countries.[3].

A German development and pilot study similarly found that 88% of 33 children and adolescents preferred the five-level version because it allowed more detailed reporting of their health [4]. The expansion from three to five levels increases the number of possible health profiles and permits more differentiated reporting. This is useful when changes in health are relatively small or when a clinical population has many respondents clustered at the best health level. However, greater granularity does not automatically establish superior measurement performance. Children must be able to distinguish adjacent response levels consistently, and the meaning of a level can depend on age, language, cultural context, and the dimension being assessed [5].

3. FEASIBILITY AND ACCEPTABILITY

Feasibility is an important requirement for pediatric patient-reported outcome measures because lengthy or cognitively demanding questionnaires can increase missing data and reduce the quality of self-reported information. In the early EQ-5D-Y studies, children generally understood the youth-specific wording and found it more acceptable than the adult EQ-5D [1,2]. The later 5-Level Youth Version (Y-5L) development programme retained this emphasis on cognitive accessibility [3,4].

Clinical studies generally support practical administration. In a South African comparison involving 550 children and adolescents aged 8–15 years, missing responses were low for both the Y-3L and Y-5L, although the Y-5L had somewhat more missing responses than the Y-3L [6]. In acute orthopaedic care, the Y-5L was completed repeatedly over a short clinical interval and was sufficiently feasible for longitudinal assessment [7]. A psychiatric inpatient study also found that the Y-5L could be used as a patient-reported outcome in children and adolescents receiving mental health care [8]. These findings suggest that the instrument is suitable for routine research administration in school-age populations, although feasibility should still be evaluated in populations with cognitive, developmental, language, or communication limitations.

4. CONTENT VALIDITY AND INTERPRETABILITY

Content validity concerns whether an instrument adequately represents the health concepts that matter to the population being measured. The Y-5L was explicitly developed with input from children and adolescents, rather than simply adding response categories to the adult instrument. The development programme used cognitive interviews and response-scaling methods to determine whether the severity labels represented distinguishable points along the health continuum [3-5].

Recent primary research also illustrates why content validity must be examined within specific populations. In children with intellectual disability, qualitative work found that the five EQ-5D-Y-5L dimensions did not capture every aspect of life that caregivers considered important, particularly domains related to communication, relationships, and participation [9]. This does not necessarily invalidate the instrument; rather, it reinforces the distinction between a concise generic health measure and a comprehensive quality-of-life profile. In clinical research where school functioning, family relationships, cognition, or disease-specific symptoms are central outcomes, the EQ-5D-Y-5L may need to be supplemented by condition-specific or broader pediatric HRQoL measures. Evidence from Chinese qualitative research

similarly suggests that cultural factors can influence the relevance and interpretation of the EQ-5D-Y dimensions [10]. Consequently, translation should not be treated as a purely linguistic exercise. Cognitive debriefing and local validation are important when the instrument is introduced into a new language or healthcare system.

5. RELIABILITY AND CONSTRUCT VALIDITY

Reliability describes the consistency of measurement when health status is expected to remain stable. Evidence for the EQ-5D-Y-5L is encouraging but heterogeneous. In children with intellectual disability, caregiver proxy test-retest reliability was fair to substantial for four dimensions, while pain/discomfort and the EQ VAS were less stable [11]. In adolescents with scoliosis, proxy-reported Y-5L demonstrated acceptable test-retest characteristics and discriminatory ability, although performance differed between dimensions and clinical subgroups [12]. A large Australian Pediatric Multidimensional Impact of Chronic Illness Scale (P-MIC) analysis including both self-completed and proxy samples found fair test-retest agreement overall and greater informativity for the Y-5L than the Y-3L [13].

Construct validity is commonly assessed by examining whether EQ-5D-Y-5L dimensions correlate with conceptually related measures and distinguish groups expected to differ in health. In South African children, corresponding Pediatric Quality of Life Inventory (PedsQL) dimensions showed moderate to high correlations with Y-5L dimensions, and the Y-5L distinguished several known health groups [6]. In acute orthopaedic care, the instrument demonstrated associations with self-rated health and PedsQL measures and detected short-term change following treatment [7]. In children with juvenile idiopathic arthritis, the parent-proxy Y-5L showed strong correlations between pain/discomfort and the Childhood Health Assessment Questionnaire pain index, as well as strong known-group discrimination between inactive and active disease [14]. These findings are broadly consistent with earlier EQ-5D-Y-3L evidence. Japanese validation work showed adequate test-retest reliability and construct validity in self-report data, while parent proxy responses were more reliable in some analyses but did not reproduce all self-report relationships [15]. Studies in asthma, chronic kidney disease, school populations, and chronically ill children further demonstrate that the youth EQ-5D can detect clinically relevant differences in pediatric health status [16-20].

6. EQ-5D-Y-5L VERSUS EQ-5D-Y-3L

The principal rationale for the Y-5L is greater descriptive discrimination. Several head-to-head studies have reported

lower ceiling effects and greater informativity with five levels. In acute orthopaedic care, the proportion reporting the best possible profile decreased when moving from Y-3L to Y-5L, while Shannon informativity increased [7]. A large Australian P-MIC analysis similarly found lower ceiling effects and greater discriminatory power for Y-5L in both self- and proxy-reported data [13]. A separate comparison in South Africa reported moderate to substantial test-retest agreement for both instruments and concluded that the Y-5L retained validity and reliability while reducing the ceiling effect [21].

Performance is not uniformly better across every metric. In a multiethnic Asian cohort of children with heart disease, the Y-5L was more responsive longitudinally than the Y-3L, but both instruments showed substantial ceiling effects and the PedsQL Generic Core Scales were more discriminative for some cross-sectional comparisons [22]. In adolescents aged 12–18 years, direct comparison of the Y-5L with the adult EQ-5D-5L found lower ceiling effects and better differentiation of adolescents with special healthcare needs or mental health concerns using the youth instrument, but some subgroups showed stronger test-retest reliability with the adult version [23]. Thus, the Y-5L should be viewed as a more granular youth-specific alternative rather than an instrument that is uniformly superior under every circumstance (Table 1).

Table 1. Key characteristics of the EQ-5D-Y-5L

Characteristic	EQ-5D-Y-5L
Population	Children and adolescents; designed primarily for self-report from school age onward
Dimensions	Mobility; looking after myself; usual activities; pain/discomfort; worried/sad/unhappy
Response levels	Five severity levels per dimension
Global health	EQ VAS
Primary purpose	Generic description of health-related quality of life
Main advantage over Y-3L	Greater response granularity and informativity
Important limitation	May not capture all pediatric-specific domains such as school, relationships, or disease-specific symptoms
Economic evaluation	Requires appropriate preference weights/value sets for utility-based analyses

7. Proxy reporting and special populations

Self-report is preferable when children can understand and complete the instrument because HRQoL is inherently subjective. Nevertheless, proxy reporting is important when children are too young, too ill, cognitively impaired, or

otherwise unable to provide reliable self-report. The interpretation of proxy data requires caution because parent and child perceptions may differ. Earlier EQ-5D-Y research demonstrated discrepancies between child and parent assessments, particularly in children with cerebral palsy and mobility impairment [24,25].

Y-5L evidence reinforces this issue. In intellectual disability, caregiver reports produced useful information and generally good convergent validity, but some domains were less stable [11]. In juvenile idiopathic arthritis, the parent-proxy version showed strong construct validity and good informativity across clinical states [14]. In very young children, adapted versions of the Y-5L have also been examined in proxy respondents, with evidence that age-appropriate modifications may alter psychometric performance [26]. These studies support the use of proxy administration when necessary but argue against treating child and proxy responses as interchangeable observations.

8. APPLICATIONS IN PEDIATRIC CLINICAL CARE AND PHARMACY PRACTICE

The EQ-5D-Y-5L has potential applications across pediatric clinical research and pharmacy practice because it provides a short, generic measure that can be administered alongside clinical outcomes. In pharmacotherapy studies, it can complement measures such as disease activity, laboratory results, symptom scores, and adverse-event reporting. For pharmacists, this creates an opportunity to examine whether an intervention produces a meaningful change from the patient's perspective rather than relying only on surrogate clinical outcomes. Potential pharmacy applications include evaluation of medication adherence interventions, monitoring of treatment-related symptoms, assessment of adverse effects that affect daily functioning, comparison of alternative pharmacological strategies, and incorporation of patient-reported outcomes into medication therapy management. In chronic diseases such as juvenile idiopathic arthritis, asthma, diabetes, and chronic kidney disease, EQ-5D-Y studies have demonstrated that the instrument can capture differences associated with disease burden and patient characteristics [14,16-19]. Electronic collection may also support longitudinal monitoring; in juvenile idiopathic arthritis, EQ-5D-Y-5L responses collected through a mobile health application were examined in relation to disease activity and potential treatment adjustment [27].

Implementation research is beginning to examine how the Y-5L can be incorporated into routine pediatric outpatient care. A recent Australian co-design programme developed a model in which Y-5L responses are displayed by item and over time, with patients and caregivers able to identify issues for discussion with clinicians [28,29]. Such an approach is relevant to pharmacy practice because a

PROM is most useful when abnormal or worsening responses lead to clinical review, medication assessment, counseling, or referral rather than being collected only for documentation.

9. HEALTH-ECONOMIC EVALUATION AND VALUATION

The EQ-5D family is distinctive because it can support preference-based health-state valuation and, where appropriate value sets exist, utility-based economic evaluation. This is especially relevant to pediatric pharmacoeconomics, where cost-effectiveness analyses increasingly need outcomes that can be expressed on a common scale. However, pediatric valuation is methodologically complex because preferences about a child's health may differ according to the age of the child and the perspective adopted by respondents [30-32].

Early valuation research showed that adult EQ-5D-3L value sets should not simply be transferred to EQ-5D-Y states because wording and perspective affect preferences [31]. Subsequent studies compared child and adult perspectives and examined how changing the age of the hypothetical child affects stated preferences [30,32]. These findings are important because the utility assigned to a health state can affect incremental cost-effectiveness ratios and quality-adjusted life-year estimates. Valuation work specific to the Y-5L is now developing. A five-country study of adults and adolescents found that adults could generally distinguish the five severity levels in valuation tasks, while adolescent responses contained more randomness; the relative importance of dimensions also differed between adults and adolescents [33].

A feasibility study found that adolescents could participate in valuation exercises for both Y-5L and adult EQ-5D-5L health states, although methodological challenges remained [34]. More recent Australian work has tested discrete-choice valuation methods that account for nonlinear time preferences and examined the effect of asking adults to value their own health versus the health of a 10-year-old [35]. These studies indicate that the transition from descriptive measurement to utility estimation should be considered a separate methodological step rather than assumed to follow automatically from the availability of the questionnaire.

10. CROSS-CULTURAL ADAPTATION AND INTERNATIONAL USE

The EQ-5D-Y has been translated and evaluated in multiple countries, and Y-5L work is expanding the evidence base. Web-based Spanish and Catalan versions of the EQ-5D-Y demonstrated feasibility and broadly comparable measurement properties to the paper version in a large

school sample [36]. Korean, Japanese, Chinese, and other national studies have similarly examined the youth instrument in population and clinical settings [15,17,37]. The Y-5L has subsequently been adapted into additional languages, including Bahasa Indonesia, using structured translation and cultural adaptation procedures [38].

Cross-cultural use is important because response patterns can be influenced by social expectations, health literacy, family roles, and interpretation of concepts such as self-care or usual activities. The evidence therefore supports local cognitive testing and psychometric evaluation rather than assuming that performance demonstrated in one country will automatically generalize to another (Table 2).

11. LIMITATIONS OF THE CURRENT EVIDENCE

Several limitations should temper interpretation of the current literature. First, many Y-5L studies have relatively modest sample sizes and are concentrated in particular regions or clinical specialties. Second, evidence is uneven across psychometric properties: feasibility and content validity are better established than test-retest reliability, responsiveness, and utility-score interpretation. Third, substantial ceiling effects can persist even with five response levels, particularly in relatively healthy populations [22].Fourth, proxy and child responses may differ, especially in domains involving subjective symptoms or emotional well-being. Another limitation is that the Y-5L is a generic measure. Its five dimensions do not represent the full range of experiences relevant to pediatric life. School participation, family relationships, social functioning, cognition, treatment burden, and disease-specific symptoms may be incompletely

represented. This is not a defect unique to the Y-5L; it reflects the trade-off between a brief generic instrument and a comprehensive disease-specific measure. In research where these domains are central, the Y-5L should be used alongside complementary measures rather than as the sole outcome.

12. FUTURE RESEARCH PRIORITIES

Future studies should prioritize large, longitudinal, multicountry samples that evaluate reliability, construct validity, responsiveness, and clinically meaningful change using prespecified hypotheses. Comparative studies should include established pediatric instruments such as PedsQL and Child Health Utility 9D (CHU9D) when the research question concerns discrimination, responsiveness, or convergent validity. Studies should also report results separately for self-report and proxy-report samples and, where possible, examine age-related differences. Research is particularly needed in pediatric pharmacy populations. Clinical trials and real-world studies could examine whether Y-5L scores respond to changes in pharmacotherapy, medication adherence, treatment toxicity, and pharmacist-led interventions. Linking Y-5L responses with medication exposure, adverse drug reactions, and clinical outcomes may help establish its value as a patient-centered endpoint. Health-economic research should continue to develop and test Y-5L value sets using transparent, child-appropriate valuation methods. The choice of respondent perspective, age framing, valuation technique, and treatment of duration effects should be reported clearly. These issues are central to the future use of the Y-5L in cost-effectiveness analysis and pediatric health technology assessment.

Table 2. Selected primary studies informing the evidence base

Study	Population	Instrument focus	Main contribution
Kreimeier et al., 2019 [2]	Children/adolescents, 8–15 y	Y-5L development	Five-level descriptive system; preference and comprehensibility testing
Verstraete et al., 2022 [7]	Acute orthopaedic care	Y-5L vs Y-3L	Greater informativity and responsiveness over short-term recovery
Bahrampour et al., 2024 [13]	Australian children/adolescents and proxies	Y-5L vs Y-3L	Lower ceiling effect and greater discriminatory power
Downs et al., 2024 [11]	Children with intellectual disability	Y-5L proxy	Good convergent validity; variable test-retest reliability
Ohinmaa et al., 2024 [14]	Juvenile idiopathic arthritis	Y-5L parent proxy	Good construct validity and informativity
Reyes et al., 2025 [32]	Adolescents, 12–18 y	Y-5L vs EQ-5D-5L	Youth instrument showed lower ceiling effects and better differentiation for some groups
Pan et al., 2025 [29]	Adults and adolescents in 5 countries	Y-5L valuation	Age and perspective influenced stated preferences
Gandhi et al., 2025 [33]	Children/adolescents with heart disease	Y-5L vs other HRQoL instruments	Y-5L showed strong longitudinal responsiveness

CONCLUSION

The EQ-5D-Y-5L is a concise, youth-specific generic measure of HRQoL that provides greater descriptive granularity than the original three-level EQ-5D-Y. Primary studies generally support its feasibility, content validity, informativity, and construct validity in school-age children and adolescents, with evidence across general populations and conditions including orthopaedic disease, scoliosis, psychiatric care, intellectual disability, juvenile idiopathic arthritis, and heart disease. The five-level structure can reduce ceiling effects and improve discrimination, but performance varies by population and measurement objective. Proxy reporting is useful when self-report is not feasible but should not be assumed to be equivalent to child self-report. For pharmacy practice, the instrument can complement clinical and medication-related outcomes and may support longitudinal patient-centered monitoring. The principal unresolved issues concern responsiveness, interpretation of change, performance in diverse populations, and the development and application of appropriate preference-based value sets. The EQ-5D-Y-5L is therefore best considered one component of pediatric outcome assessment, selected according to the clinical population, purpose, and measurement context.

REFERENCES

1. Wille N, Badia X, Bonsel G, Burström K, Cavrini G, Devlin N, et al. Development of the EQ-5D-Y: a child-friendly version of the EQ-5D. *Qual Life Res.* 2010 Aug;19(6):875-86. doi: 10.1007/s11136-010-9648-y.
2. Ravens-Sieberer U, Wille N, Badia X, Bonsel G, Burström K, Cavrini G, et al. Feasibility, reliability, and validity of the EQ-5D-Y: results from a multinational study. *Qual Life Res.* 2010 Aug;19(6):887-97. doi: 10.1007/s11136-010-9649-x.
3. Kreimeier S, Åström M, Burström K, Egmar AC, Gusi N, Herdman M, et al. EQ-5D-Y-5L: developing a revised EQ-5D-Y with increased response categories. *Qual Life Res.* 2019;28(7):1951-1961. doi:10.1007/s11136-019-02115-x.
4. Kreimeier S, Greiner W. Development of the German version of EQ-5D-Y-5L to measure health-related quality of life in children and adolescents: identification of response labels and pilot testing. *Z Evid Fortbild Qual Gesundheitswes.* 2019 Aug;144-145:24-34. doi: 10.1016/j.zefq.2019.05.011.
5. Derrett S, Herdman M, Ngwira LG, Moore EY, Jelsma J. A New Approach to Assessing Children's Interpretation of Severity Qualifiers in a Multi-Attribute Utility Instrument-The EQ-5D-Y-5L: Development and Testing. *Patient.* 2021 Sep;14(5):591-600. doi: 10.1007/s40271-021-00496-1.
6. Verstraete J, Scott D. Comparison of the EQ-5D-Y-5L, EQ-5D-Y-3L and PedsQL in children and adolescents. *J Patient Rep Outcomes.* 2022 Jun 16;6(1):67. doi: 10.1186/s41687-022-00480-9.
7. Verstraete J, Marthinus Z, Dix-Peek S, Scott D. Measurement properties and responsiveness of the EQ-5D-Y-5L compared to the EQ-5D-Y-3L in children and adolescents receiving acute orthopaedic care. *Health Qual Life Outcomes.* 2022 Feb 17;20(1):28. doi: 10.1186/s12955-022-01938-6.
8. Åström M, Krig S, Ryding S, Cleland N, Rolfson O, Burström K. EQ-5D-Y-5L as a patient-reported outcome measure in psychiatric inpatient care for children and adolescents - a cross-sectional study. *Health Qual Life Outcomes.* 2020 Jun 3;18(1):164. doi: 10.1186/s12955-020-01366-4.
9. Blackmore AM, Mulhern B, Norman R, Reddihough D, Choong CS, Jacoby P, et al. How well does the EQ-5D-Y-5L describe children with intellectual disability?: "There's a lot more to my child than that she can't wash or dress herself." *Value Health.* 2024;27(2):190-198. doi:10.1016/j.jval.2023.11.005.
10. Ding Y, Zhang G, Yang Z, Sun Y, Shen A, Mao Z, Wang P, et al. Evaluating the content validity of the EQ-5D-Y for Chinese children and adolescents. *Qual Life Res.* 2025 Jun;34(6):1587-1596. doi: 10.1007/s11136-025-03917-y.
11. Downs J, Norman R, Mulhern B, Jacoby P, Reddihough D, Choong CS, et al. Psychometric Properties of the EQ-5D-Y-5L for Children With Intellectual Disability. *Value Health.* 2024 Jun;27(6):776-783. doi: 10.1016/j.jval.2024.02.016.
12. Lin J, Wong CKH, Cheung JPY, Cheung PWH, Luo N. Psychometric performance of proxy-reported EQ-5D youth version 5-level (EQ-5D-Y-5L) in comparison with three-level (EQ-5D-Y-3L) in children and adolescents with scoliosis. *Eur J Health Econ.* 2022 Nov;23(8):1383-1395. doi: 10.1007/s10198-022-01435-z.
13. Bahrapour M, Devlin N, Jones R, Dalziel K, Mulhern B; QUOKKA Team. A Comparison of the Psychometric Properties of the EQ-5D-Y-3L and EQ-5D-Y-5L Using Paediatric Multi-Instrument Comparison (P-MIC) Study Data. *Pharmacoeconomics.* 2024 Jun;42(Suppl 1):95-111. doi: 10.1007/s40273-024-01379-7.
14. Ohinmaa A, Wen J, Currie GR, Benseler SM, Swart JF, Vastert SJ, et al. Validation of the EQ-5D-Y-5L parent-proxy version among children with juvenile idiopathic arthritis. *Qual Life Res.* 2024 Oct;33(10):2677-2691. doi: 10.1007/s11136-024-03682-4.
15. Shirowa T, Fukuda T, Shimozuma K. Psychometric properties of the Japanese version of the EQ-5D-Y by self-report and proxy-report: reliability and construct validity. *Qual Life Res.* 2019 Nov;28(11):3093-3105. doi: 10.1007/s11136-019-02238-1.
16. Gusi N, Pérez-Sousa MA, Gozalo-Delgado M, Olivares PR. Validity and reliability of the Spanish EQ-5D-Y proxy version. *An Pediatr (Barc).* 2014 Oct;81(4):212-9. doi: 10.1016/j.anpedi.2013.11.028.
17. Canaway AG, Frew EJ. Measuring preference-based quality of life in children aged 6-7 years: a comparison of the performance of the CHU-9D and EQ-5D-Y--the WAVES pilot study. *Qual Life Res.* 2013 Feb;22(1):173-83. doi: 10.1007/s11136-012-0119-5.
18. Bergfors S, Åström M, Burström K, Egmar AC. Measuring health-related quality of life with the EQ-5D-Y instrument in children and adolescents with asthma. *Acta Paediatr.* 2015;104(2):167-173. doi:10.1111/apa.12863.

19. Chen G, Flynn T, Stevens K, Brazier J, Huynh E, Sawyer M, et al. Assessing the health-related quality of life of Australian adolescents: an empirical comparison of the Child Health Utility 9D and EQ-5D-Y instruments. *Value Health*. 2015;18(4):432-438. doi:10.1016/j.jval.2015.02.014.
20. Robles N, Rajmil L, Rodriguez-Arjona D, Azuara M, Codina F, Raat H, et al. Development of the web-based Spanish and Catalan versions of the Euroqol 5D-Y (EQ-5D-Y) and comparison of results with the paper version. *Health Qual Life Outcomes*. 2015 Jun 3;13:72. doi: 10.1186/s12955-015-0271-z.
21. Kim SK, Jo MW, Kim SH. A cross sectional survey on health-related quality of life of elementary school students using the Korean version of the EQ-5D-Y. *PeerJ*. 2017 Mar 21;5:e3115. doi: 10.7717/peerj.3115.
22. Perez Sousa MÁ, Olivares Sánchez-Toledo PR, Gusi Fuerte N. Parent-child discrepancy in the assessment of health-related quality of life using the EQ-5D-Y questionnaire. *Arch Argent Pediatr*. 2017 Dec 1;115(6):541-546. doi: 10.5546/aap.2017.eng.541.
23. Scott D, Ferguson GD, Jelsma J. The use of the EQ-5D-Y health related quality of life outcome measure in children in the Western Cape, South Africa: psychometric properties, feasibility and usefulness - a longitudinal, analytical study. *Health Qual Life Outcomes*. 2017;15(1):12. doi:10.1186/s12955-017-0590-3.
24. Otto C, Barthel D, Klasen F, Nolte S, Rose M, Meyrose AK, et al. Predictors of self-reported health-related quality of life according to the EQ-5D-Y in chronically ill children and adolescents with asthma, diabetes, and juvenile arthritis: longitudinal results. *Qual Life Res*. 2018 Apr;27(4):879-890. doi: 10.1007/s11136-017-1753-8.
25. Craig BM, Greiner W, Brown DS, Reeve BB. Valuation of Child Health-Related Quality of Life in the United States. *Health Econ*. 2016 Jun;25(6):768-77. doi: 10.1002/hec.3184.
26. Kind P, Klose K, Gusi N, Olivares PR, Greiner W. Can adult weights be used to value child health states? Testing the influence of perspective in valuing EQ-5D-Y. *Qual Life Res*. 2015 Oct;24(10):2519-39. doi: 10.1007/s11136-015-0971-1.
27. Kreimeier S, Oppe M, Ramos-Goñi J, Cole A, Devlin N, Herdman M, et al. Valuation of EuroQol Five-Dimensional Questionnaire, Youth Version (EQ-5D-Y) and EuroQol Five-Dimensional Questionnaire, Three-Level Version (EQ-5D-3L) Health States: The Impact of Wording and Perspective. *Value Health*. 2018 Nov;21(11):1291-1298. doi: 10.1016/j.jval.2018.05.002.
28. Ramos-Goñi JM, Estévez-Carrillo A, Rivero-Arias O, Rowen D, Mott D, Shah K, et al. Does changing the age of a child to be considered in 3-level version of EQ-5D-Y discrete choice experiment-based valuation studies affect health preferences? *Value Health*. 2022;25(7):1196-1204. doi:10.1016/j.jval.2022.03.001.
29. Pan T, Ramos-Goni JM, Roudijk B, Xie S, Xie F, Yang Z, et al. Testing the Valuation of the EQ-5D-Y-5L in Adults and Adolescents: Results From a 5-Country Study and Implications for the Descriptive System. *Value Health*. 2025 Dec;28(12):1900-1910.
30. Sullivan TA, Wyeth EH, Turner RM, Hansen P, Ombler F, Devlin NJ, et al. Can Adolescents Value the EQ-5D-Y-5L and EQ-5D-5L, and How Do the Values Compare? A Feasibility Study. *Value Health*. 2025 Jun;28(6):936-944. doi: 10.1016/j.jval.2025.02.013.
31. Yu A, Roudijk B, Jiang P, Norman R, Viney R, Street D, et al. Valuation of the EQ-5D-Y-5L Using DCE Methods That Account for Nonlinear Time Preferences. *Med Decis Making*. 2026 Apr;46(3):343-354. doi: 10.1177/0272989X251407950.
32. Reyes N, Pan T, Jones R, Dalziel K, Devlin N; QUOKKA project team. Understanding the Transition Between Age-Specific Measures of Health-Related Quality of Life: Evidence on the Relationship Between and Comparative Performance of the EQ-5D-Y-5L and EQ-5D-5L. *Value Health*. 2025 Aug;28(8):1231-1240. doi: 10.1016/j.jval.2025.04.2161.
33. Gandhi M, Chen CK, Zhang DZ, Lee CF, Luo N, Cheung YB. PedsQL Generic Core Scales was more discriminative while EQ-5D-Y-5L was more responsive in a longitudinal study of multiethnic Asian children and adolescents with heart disease. *J Clin Epidemiol*. 2025 Dec;188:111982. doi: 10.1016/j.jclinepi.2025.111982.
34. Lipman SA, Guo Z. EQ-5D(-Y) Valuation from Adult and Child Perspectives: Where Does the Empirical Evidence Leave Us and How Should We Proceed? *Pharmacoeconomics*. 2026 Mar;44(3):267-278. doi: 10.1007/s40273-026-01589-1.
35. Fitriana TS, Purba FD, Stolk E, Busschbach JJV. Adaptation of the Experimental Version of EQ-5D-Y-5L Into Bahasa Indonesia. *Value Health Reg Issues*. 2025 Sep;49:101121. doi: 10.1016/j.vhri.2025.101121.
36. van Heusden A, Rivero-Arias O, Herdman M, Hiscock H, Devlin N, Dalziel K; QUOKKA Project Team. Psychometric performance comparison of the adapted versus original versions of the EQ-5D-Y-3L and -Y-5L in proxy respondents for 2- to 4-year-olds. *Pharmacoeconomics*. 2024;42:129-145. doi:10.1007/s40273-024-01350-6.

How to cite this article: Agrawal A, Agrawal R. Artificial Intelligence in Pediatric Healthcare - Part III: AI in Pediatric Inpatient and Critical Care. *Indian J Child Health*. 2026; 13(9):122-128.

Funding: None; Conflicts of Interest: None Stated.