

Mapping the Use of Capability Measures (ICECAP-A and O) in Economic Evaluations

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INTRODUCTION

- Generic health-related quality of life (HRQoL) measures such as EQ-5D are important for utility elicitation and use in economic modelling but may overlook broader dimensions of patient well-being.
- Capability measures, such as the 'ICEpop CAPability measure for Older people' (ICECAP-O, 2006) and Adults (ICECAP-A, 2012), may capture benefits other tools cannot.²
- ICECAP-O and ICECAP-A are both recommended for use by health technology assessment (HTA) bodies such as the National Institute for Health and Care Excellence (NICE)³ in 2013 and the Zorginstituut Nederland (ZIN)⁴ in 2016 for evaluating the broader well-being and capability outcomes of long-term care interventions.
- However, the use of ICECAP-O and ICECAP-A in economic evaluations remains unclear, and other Health Technology Assessment (HTA) bodies have yet to recommend these measures.

OBJECTIVE

- To assess the use of ICECAP-A and ICECAP-O within economic evaluations, including how often and where they were applied, in which disease areas, the evaluation frameworks used, and whether they were integrated within analyses or applied separately.

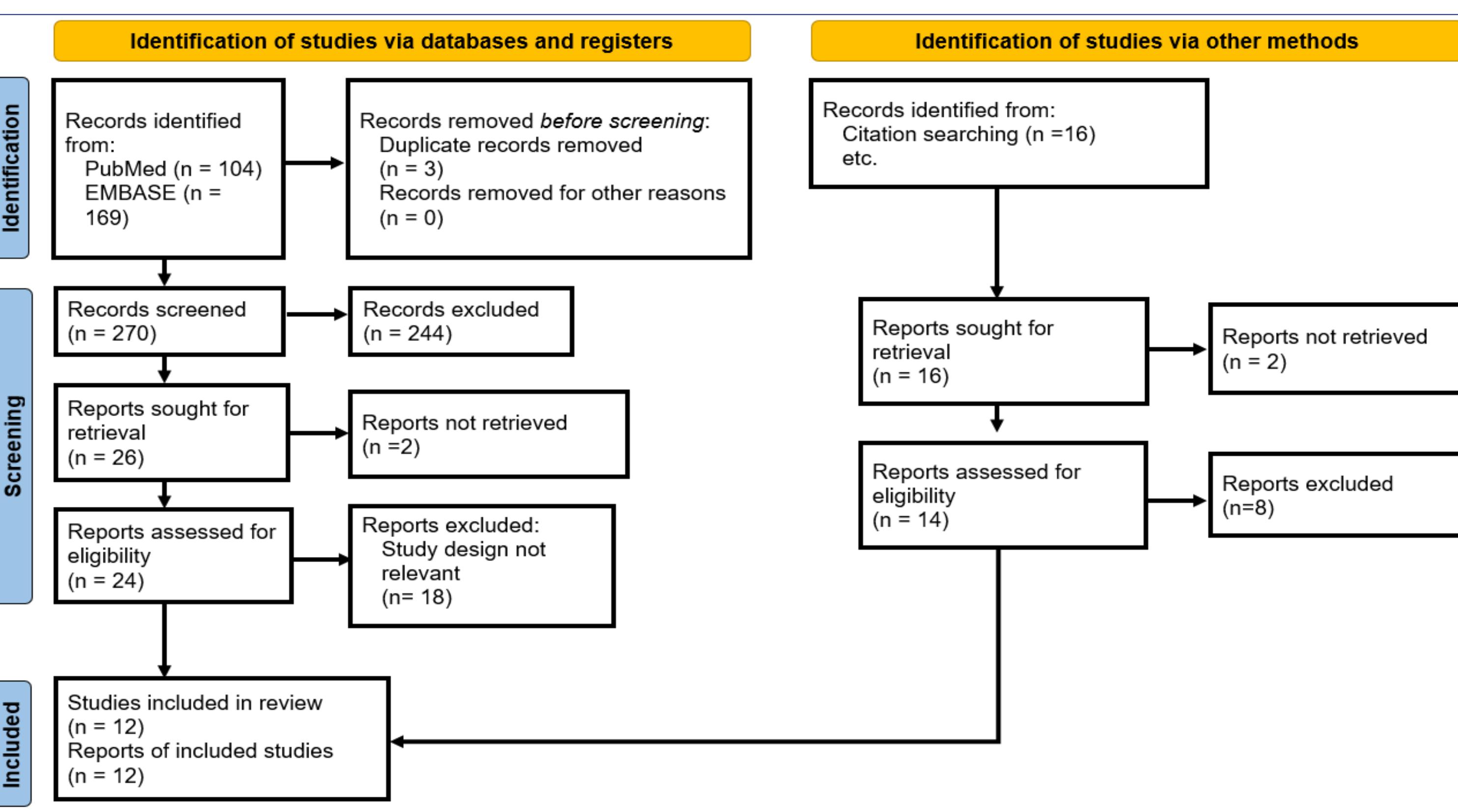
METHODS

- PubMed (MEDLINE) and Embase were searched for published economic evaluations utilizing ICECAP-A/O from database inception to June 2025.
- Search results were screened for full economic evaluations (e.g. cost-effectiveness, cost-utility, cost-benefit, or cost-consequence analyses) which used these capability measures.

RESULTS

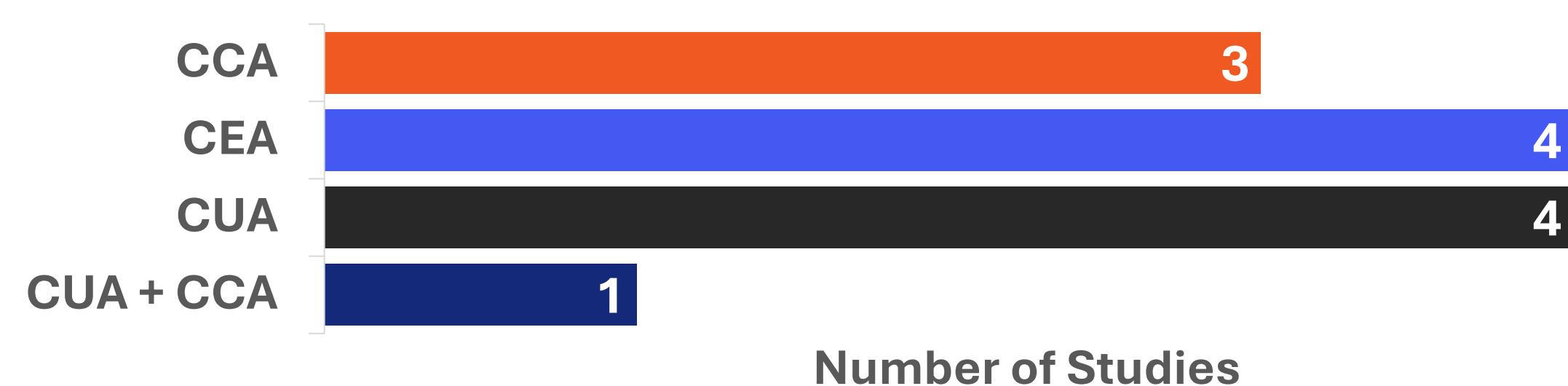
- Twelve studies were identified and selected for this review (Figure 1).

Figure 1: PRISMA



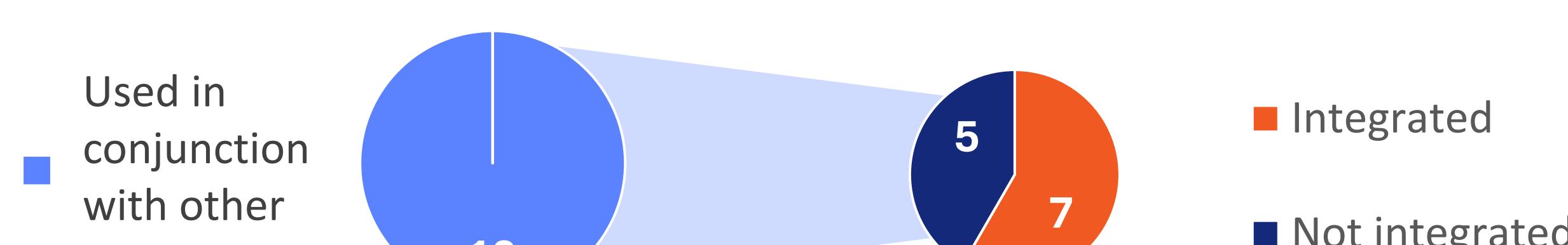
- ICECAP-A was used in 5 studies while ICECAP-O was used in 7.
- Eleven studies were conducted in Europe (9 in the United Kingdom [UK], 2 in the Netherlands) and 1 was conducted in Iran.
- The most common study designs were cost-effectiveness (CEA) and cost-utility (CUA) analyses. Three studies used cost-consequence analysis (CCA), a less common design that lists costs and outcomes separately to capture broader intervention effects. (Figure 2)

Figure 2: Identified Study Designs



- All 12 studies incorporated ICECAP (A/O) alongside EQ-5D or other HRQoL measures. Seven studies integrated ICECAP within their evaluations. (Figure 3)
- The remaining five studies did not integrate ICECAP within their evaluations because the interventions demonstrated negligible effects on capability and no statistically significant differences between intervention and comparator groups.

Figure 3: Applications of ICECAP A/O Across Studies



- Identified studies (Table 1) covered central nervous system (CNS) conditions (3 studies), cardiovascular/metabolic conditions (cardiovascular disease [CVD]/diabetes; 3 studies), musculoskeletal (MSK) disorders (2 studies), chronic kidney disease (CKD; 1 study), sensory/visual impairment (2 studies), and frailty/older adult health (2 studies).
- Five studies reported identical quality-adjusted life-year (QALY) and ICECAP results. (Table 1)
- ICECAP and QALY values differed when physical symptoms were unaffected while broader capabilities declined or when physical symptoms improved while broader capabilities were unaffected.^{6,7}

RESULTS (Cont.)

Table 1: Reporting of QALY and Capability Measure Results in Included Studies.

Sl. No.	Author (Year), Country	Measure (ICECAP-A/O)	Disease Area	Intervention vs. Comparator	Perspective	QALYs vs. Capability Values
1	Bray et al. (2025) ⁶ UK	ICECAP-A	Schizophrenia and other recurrent psychotic disorders	Antipsychotic dose reduction vs. Maintenance	National Health Service (NHS), health & social care, societal	Not identical (QALY: neutral; Capability: comparator outperformed the intervention)
2	Neilson et al. (2024) ⁷ UK	ICECAP-A	Clinical records suggest Persistent physical symptoms (PPS)	Extended-role General Practitioner clinic vs. Usual care (UC)	NHS & Personal and Social Services (PSS)	Not identical (QALY: intervention outperformed the comparator; Capability: Sensitive to assumptions)
3	Moghadam et al. (2023) ⁸ Iran	ICECAP-O	Chronic kidney disease	Haemodialysis vs. Comprehensive Conservative Care (CCC)	Patient	Nearly identical (QALY & Capability: intervention outperformed the comparator)
4	Patty et al. (2018) ⁹ Netherlands	ICECAP-O	Visual impairment	Information and Communication Technology (ICT) training vs. before ICT	Societal	Nearly identical (QALY & Capability: intervention outperformed the comparator)
5	Bray et al. (2017) ¹⁰ UK	ICECAP-A	Visual impairment	Portable Electronic Vision Enhancement System (p-EVES) + Optical Low Vision Aids (LVAs) vs. optical LVA	Societal	Nearly identical (QALY & Capability: neutral)
6	Makai et al. (2015) ¹¹ Netherlands	ICECAP-O	Health decline in the frail older people	Walcheren Integrated Care Model (WICM) vs. Standard care	Societal	Nearly identical (QALY & ICECAP: neutral)
7	Henderson et al. (2013) ¹² UK	ICECAP-O	Heart failure, chronic obstructive pulmonary disease, or diabetes	Telehealth vs. UC	Health & social services	Nearly identical (QALY & Capability: neutral)
8	Scobie et al. (2021) ¹³ UK	ICECAP-O	Parkinson's disease	Lee Silverman Voice Treatment LOUD, NHS speech and language therapy (SLT), vs. No treatment	NHS	Not Applicable (QALY: SLT outperformed at 3 months; Capability: not integrated)
9	Parker et al. (2019) ¹⁴ UK	ICECAP-A	Diabetes	Digital vs. Traditional foot orthoses	NHS	Not Applicable (QALY: neutral; Capability: not integrated)
10	Oppong et al. (2018) ¹⁵ UK	ICECAP-A	Osteoarthritis patients	Osteoarthritis(OA) consultation vs. UC	NHS	Not Applicable (QALY: neutral; Capability: not integrated)
11	Williams et al. (2016) ¹⁶ UK	ICECAP-O	Hip fracture rehabilitation in older adults	Enhanced rehabilitation package + UC vs. UC	Health & social care	Not Applicable (QALY neutral; Capability: not integrated)
12	Clare et al. (2015) ¹⁷ UK	ICECAP-O	Dementia prevention / Healthy ageing	Goal-setting (GS), GS with Monitoring (GM) vs. Information (IC)	Health & social care	Not Applicable (QALY: intervention outperformed the comparator; Capability: not integrated)

DISCUSSION

- The infrequent use of ICECAP-A/O and its use in combination with measures such as EQ-5D may reflect ongoing exploration of its role alongside more established tools and invites further examination.
- While QALYs and ICECAP-A/O often yield similar conclusions, the ICECAP-A/O can capture subtle differences in capability and broader wellbeing that QALYs may miss, as evidenced by two studies where results diverged.
- The ICECAP-A/O may be particularly informative and useful in evaluations for therapies in disease areas such as CNS, where outcomes extend beyond health-related aspects.

CONCLUSION

- The uptake of ICECAP measures in economic evaluations is increasing, reflecting growing interest in patient-centered outcomes. Further research is needed to determine whether they can be meaningfully used to more comprehensively quantify therapeutic value in economic evaluations.

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