

Table 1. Comparison of three complementary methodological sources informing the proposed TCA.

Topic	ISPOR Task Force (Wild et al.) [13]	Sousa & Rojjanasirrat [14]	Maksl et al. (15-item true/false news literacy knowledge) [5]	Student-oriented public health takeaway
Primary focus	Good-practice workflow for translation and cultural adaptation of patient-reported outcome measures (often used more broadly).	User-friendly stepwise guideline for translation/cultural adaptation followed by psychometric testing in the target population.	Instrument-anchored adaptation/validation constraints for a true/false knowledge test (single correct answer, domain coverage).	Choose a translation workflow, but also plan how evidence will be generated and reported; knowledge tests need extra rules beyond language.
Step structure	Multi-step process: preparation, dual forward translation, reconciliation back-translation, review, cognitive debriefing, finalization, and documentation.	Similar core steps with emphasis on expert committee review, pretesting/cognitive interviews, and subsequent validation.	Not a generic translation framework; emphasizes preserving item meaning and answer key, and evaluating item performance after adaptation.	Use a clear step-by-step flow and produce concrete outputs (versions, decision log, debriefing summary, final report).
Conceptual equivalence	Emphasizes conceptual equivalence through iterative translations, expert review, and documentation.	Highlights 'centering' (symmetrical translation) to optimize conceptual and technical accuracy, not literal word-for-word translation.	Emphasizes that adaptation must not change what counts as correct/incorrect; preserve the construct map (e.g., "Five C's").	Treat adaptation as a validity procedure: preserve meaning first, then test whether items function equivalently across groups.
Roles and actors	Defines project roles (project manager, translators, reconciler, debriefing interviewer, proofreader).	Focuses on translators (informed and uninformed), expert committee, and target-language participants for debriefing.	Requires content experts to verify the answer key and domain mapping; benefits from psychometrics expertise for item-level analyses.	Plan a small but diverse team: translators + domain expert(s) + measurement/psychometrics support, even in student projects.
Cognitive debriefing / pretesting	Core step to evaluate comprehension and cultural relevance in target-language users.	Explicitly recommends pretesting with the target population and using findings to revise items.	Useful but item reuse can create familiarity bias in knowledge tests; consider parallel forms or spacing.	Do debriefing, but avoid training participants on knowledge items; document what changed and why.
Documentation	Stresses transparent reporting and a final translation report.	Encourages clear reporting of each step and psychometric outcomes.	Emphasizes reporting that supports interpretability of item-level results and domain coverage.	Make your work replicable: keep a decision log, version history, and a summary table of changes.
Evidence after translation	Not always detailed; assumes evaluation is needed for intended use.	Explicitly links adaptation to subsequent psychometric validation.	Stresses item-level evaluation and potential DIF/IRT analyses for fairness.	Do not stop at translation: plan structural validity, reliability, and equivalence testing (invariance/DIF) before comparing groups.
Special risks	General translation risks: ambiguity, poor cultural fit, inconsistent terminology.	Same general risks with emphasis on target-user comprehension.	Additional risks: guessing, truth-value drift, and familiarity/illusory truth effects with repeated exposure.	Knowledge tests need safeguards (truth verification, 'I don't know' options if appropriate, avoid repeated exposure, and item diagnostics).

Abbreviations: TCA, translation and cultural adaptation; ISPOR, International Society for Pharmacoeconomics and Outcomes Research; DIF, differential item functioning; IRT, item response theory.