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**To cite this article:** Joel Vos & Biljana van Rijn (2021) A Systematic Review of Psychometric Transactional Analysis Instruments, Transactional Analysis Journal, 51:2, 127-159, DOI: [10.1080/03621537.2021.1904360](https://doi.org/10.1080/03621537.2021.1904360)

**To link to this article:** <https://doi.org/10.1080/03621537.2021.1904360>



Published online: 22 Apr 2021.



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ARTICLE



## A Systematic Review of Psychometric Transactional Analysis Instruments

Joel Vos and Biljana van Rijn

### ABSTRACT

Since the founding of transactional analysis (TA) by Eric Berne in the 1950s, many psychometric instruments have been developed to operationalize TA concepts. Several studies have provided general reviews of these, but the studies are not systematic and do not assess the psychometric quality of the instruments. We conducted a systematic literature review of all psychometric instruments operationalizing TA concepts by searching in Pubmed, Medline, PsycInfo, APA articles, Web-of-Knowledge, and scholar.google.com. The study quality was evaluated with the consensus-based standards for the selection of health measurement instruments (COSMIN). Of the 12,287 initial search hits, we selected 56 instruments in 263 studies. Among those, the Schema Mode Inventory, the Tokyo Egogram, the Adjective Check List, the ANINT-A36, and the Life Position Scale were found to have fair to good overall COSMIN quality. Except for the Life Position Scale, they operationalize ego states (Parent, Adult, Child) and the functional analysis concepts of Critical Parent, Nurturing Parent, and Adapted/Free Child. The Life Position Scale operationalized the positive and negative positions toward self and others. Other questionnaires had poor to fair COSMIN quality, usually because of a lack of studies. Meta-analyses indicated that psychopathology and physical symptoms are associated with strong Critical Parent, strong Adapted Child, weak Integrated Adult, negative coping styles, and negative positions toward oneself and others. Many instruments need further validation and translation into more languages. The Schema Mode Inventory, the Tokyo Egogram, the Adjective Check List, and the Life Position Scale are the best validated questionnaires. These could be used by researchers to test treatment effectiveness and by psychotherapists to examine the problems and etiology of clients.

### KEYWORDS

Transactional analysis; psychometric; questionnaire; scale; review; evidence based; meta-analysis

Transactional analysis (TA) was developed by Eric Berne against the background of psychoanalytic and behaviorist theories in the 1950s. In contrast to the psychoanalytic approach of his time, Berne supplemented Freud's philosophical ideas with observable data. He shifted the dominant focus away from therapeutically interpreting the

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individual's psyche and its unconscious processes to examining how internal conflicts are presented in observable interpersonal behavior. Later developments in the TA field included the development and use of psychometric instruments such as questionnaires. Such instruments can help clients and practitioners to systematically examine transactional analysis processes and can help researchers to test the effectiveness of TA treatment.

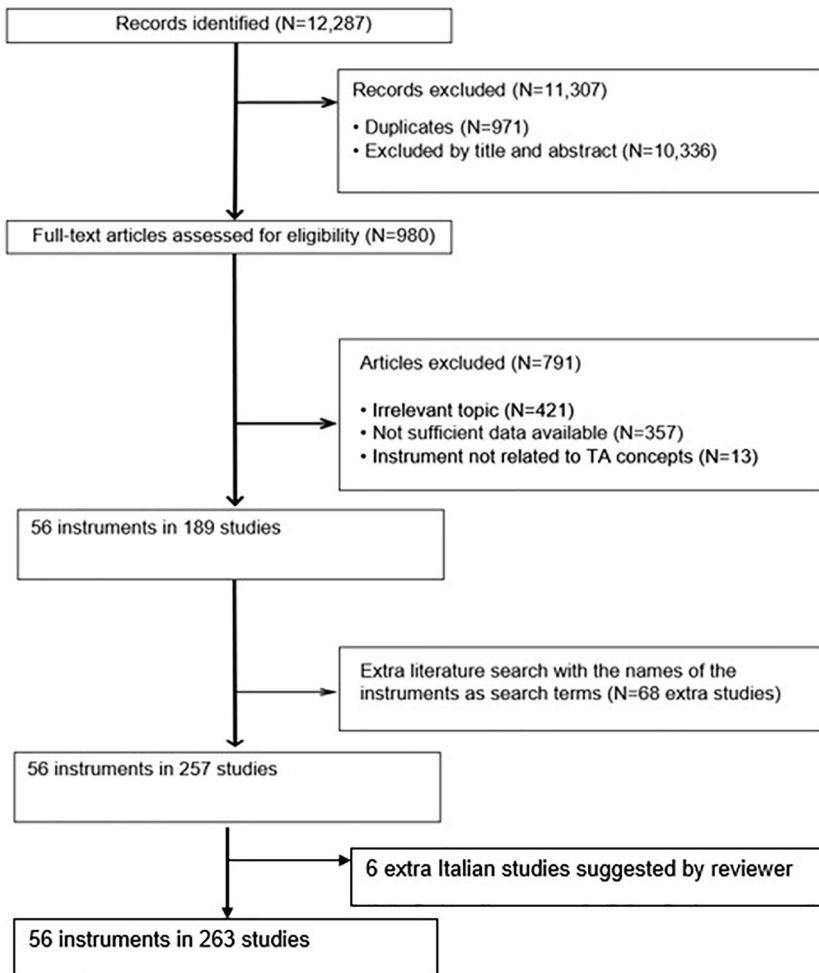
Many psychometric instruments have been developed by researchers and have been used in TA practice over the years. In a study among 6000 members of the European Association for Transactional Analysis (EATA), it appears that 14% of participants had been involved in the development of psychometric instruments. The following questionnaires were used most frequently: ANINT, Drivers Questionnaire, ESPERO 2000, Injunctions Scale, Joines Personality Adaptation Questionnaire (JPAQ), Script Questionnaire, Permission Wheel, Working styles, and ZESUI Inventory (Brajovic Car, Golovan et al., 2012). However, most of these tools have only been developed and validated once, usually as part of student theses, as a previous review by Ohlsson (2010) of transactional analysis instruments suggested.

Therefore, the aim of the work described here is to conduct a systematic review of all psychometric instruments operationalizing TA concepts and do a critical assessment of their psychometric qualities. This could help practitioners in selecting the most appropriate instruments to integrate into their practices. In addition to their use in research, questionnaires can be used in practice to help clients develop self-insight, monitor their own changes in therapy, and give feedback to therapists. In that sense, such instruments can expand other resources therapists already use and support the therapeutic alliance and dealing with ruptures in the therapeutic work.

In research, this review could help researchers to understand which TA concepts are supported by empirical evidence acquired with sound instruments and which concepts lack this empirical support (although a lack of support for a concept does not necessarily imply that the concept does not exist or is irrelevant because it could also mean that there is not sufficient psychometric research on that concept). The following research questions will be answered in this review: (1) What is the psychometric quality of the instruments, (2) which TA concepts do these psychometric instruments operationalize, (3) which TA concepts are supported by empirical evidence from high-quality instruments and which are less supported, and (4) what are the average scores of different populations on the most high-quality instruments and how are these instruments related to other instruments?

## Methods

This study is part of a larger systematic review of TA, as we have described elsewhere (Vos & van Rijn, 2020). In October 2019, we conducted a systematic literature review on all research studies on TA in multiple rounds according to PRISMA and MOOSE guidelines, as Figure 1 shows (Liberati et al., 2009; Stroup et al., 2000). We used a combination of terms to search for relevant publications in Pubmed, Medline, PsycInfo, APA articles, Web-of-Knowledge, scholar.google.com, and the repository of the



**Figure 1.** PRISMA Flowchart

Metanoia Institute and Middlesex University (see [Table 1](#)). Furthermore, relevant references were identified in the included publications, and TA practitioners were asked to send us any published and unpublished research (see details in Vos & van Rijn, 2020). We started with the selection of articles via initial screening for eligibility on the basis of abstracts and titles followed by reading full-text manuscripts; several studies were then excluded because they did not provide enough data.

For this review, we added extra searching with the names of the identified psychometric instruments as search terms. Author J.V. conducted all exclusion/inclusion of studies, which were then confirmed by author B.v.R., who independently searched and screened a random sample of 500 references. The interrater reliability Kappa was .92, which may be regarded as very good (Fleiss et al., 1981/2003; Landis & Koch, 1977). J.V. has extensive expertise in systematic reviews of humanistic therapies and psychometric instruments, and B.v.R. has extensive expertise in TA.

**Table 1.** Search Terms.

Group of search Terms	Search terms
Terms operationalizing Transactional Analysis and its associated unique concepts	"transactional analysis", "cathexis", "redecision" "Transaksiyonel Analiz", "Transaktionsanalyse", "Analyse Transactionnelle", "Transaksijske Analize", "transakční analýzy", "Transaktioanalyysi", "Tranzakcióanalitikus Egyesület", "Analisi Transazionale", "Transactionele Analyse", "Transacjiné analizé", "Transaksijska analiza", "Трансакциска анализа", "Transaksjonsanalytisk", "Analiza Tranzationala", "Трансакционный анализ", "Transakcionu Analizu", "transaksijsko analizo", "Análisis Transaccional", "Transaktionsanalytiska", "Транзакційний аналіз", "Analistas Transaccionais", "Análisis Transaccional", "المعاملات ل تحل", "交流分析", "트랜잭션 분석", "Redecision", "cathexis", "ego state*", "I am OK", "You are OK", "game analysis", "first-degree game", "second degree game", "life script", "script enactment", "script feeling*", "script behaviour*", "script re-enactment", "racket feeling*", "racket system*", "existential life position", "first-degree impasse", "injunction", "counter-injunction*", "injunctive message*", "counter-injunctive message*", "stroking", "complementary transaction*", "crossed transaction", "episcrpt*", "escape hatch*", "ulterior transaction*", "drama triangle", "therapy contract*", "counselling contract*", "contract in therapy", "contract in counsel*", "contract in coach*", "Adult-Child alliance", "deconfusion", "egogram", "Nurturing Parent", "Controlling Parent", "Adapted Child", "Natural child", "Creative Child", "Free Child", "Little professor", "stop me if you can", "clever me", "if it weren't for you", "I'm only trying to help", "let's you and him fight", "look how hard I've tried", "Now I've got you", "poor me", "see what you made me do"
Terms operationalizing research	research, study, studies, trial*, eval*, experiment, outcome, result*, effect*, change*, interview, phenomenolog*, qualitative, quantitative, survey, questionnaire, experiment, scien*

Searches were conducted by combining terms operationalizing the treatment approach and terms operationalizing research.

For this review, studies were eligible for inclusion if they described: (1) the development and/or use of a psychometric instrument with a relatively standardized and systematic approach, such as a questionnaire, checklist, or projective test, and (2) the instrument operationalizes a concept that is explicitly derived from TA theory. The latter means that the authors of the article refer to TA theory as a source of inspiration for developing the instrument. For example, without any further reference to TA in the publication, an authenticity questionnaire would be excluded but a questionnaire on ego states would be included. Instruments were excluded if there was no article with psychometric information available in English or if they only consisted of a single item.

To evaluate the psychometric quality of the instruments, we used the 10 criteria of the COSMIN (consensus-based standards for the selection of health measurement instruments) statement, which is a consensus-based standard for the selection of health measurement instruments (Mokkink et al., 2010; Mokkink et al., 2013). Table 2 summarizes the COSMIN criteria. As Terwee et al. (2011) recommended, we assessed each of the included instruments on a 4-point scale for each of the COSMIN criteria: poor, fair, good, and excellent. The overall quality was determined by summarizing the scores for an instrument. For each of the instruments, we identified the TA concepts that they operationalized; one instrument could address multiple TA concepts. To identify which TA concepts are supported by empirical evidence from high-quality instruments, we selected those TA concepts that have been operationalized by one or more psychometric instruments that have at least more than five COSMIN criteria scored as "good" or "excellent."

**Table 2.** Consensus-Based Standards for the Selection of Health Measurement Instruments (COSMIN) Criteria (see Van Bruggen et al., 2015).

Criterion	Meaning
Internal consistency	Do the items of a (sub)scale show the expected interrelatedness?
Reliability	Are the results of the test consistent over two or more applications of the test?
Measurement error	Do changes in the outcome of the test reflect “true” changes in the construct?
Content validity	Are the items of the test an adequate reflection of the intended construct?
Structural validity	Do the scores of the test reflect the dimensionality of the construct?
Hypotheses testing	Does the (sub)scale relate with other measures in the expected way?
Cross-cultural validity	Do scores of the test converge in different cultural settings?
Criterion validity	Does the (sub)scale relate with a “gold standard” in the expected way?
Responsiveness	Are changes in the construct adequately reflected in the outcome of the test?
Interpretability	Is it possible to interpret changes in the outcome of the test in a way that is meaningful to the field of interest?

We conducted meta-analyses on studies using instruments with instruments with fair to good overall COSMIN quality. The meta-analytic procedures were in line with our meta-analysis on the effectiveness of TA (Vos & van Rijn, 2020). To be able to compare the Schema Mode Questionnaire with the Tokyo Egogram and the Adjective Check List, pooled averages were calculated to combine different modes of Critical Parent in the Schema Mode Questionnaire as well as for pooled averages for Unadjusted Child and for negative coping styles. To calculate correlations between TA concepts and well-being, we selected studies using TA instruments and well-being instruments that have been developed by non-TA researchers, all with fair to good overall COSMIN quality. To score the severity of symptoms, we developed a new dummy variable with scores calculated ranging from 1 (no symptoms) to 7 (most severe symptoms). The scaling was based on the scores on the instruments in the study. We used comprehensive meta-analysis to calculate random effects with Cohen’s *d* and its 95% confidence interval (95% CI), which may be interpreted as follows: small (0.2), medium (0.5), and large (0.8) effect size (Cohen, 1988/2013). We calculated correlations between ego states and life position, on the one hand, and severity of symptoms, on the other; correlations of 0.15 are considered small, 0.40 medium, 0.60 large, and 0.80 very large (respectively  $R^2 = 0.02, 0.13, \text{ and } 0.26$ ). Random effects were calculated because studies differed in terms of population, and random effects adequately mirrored heterogeneity in behavioral studies with noninflated alpha levels (Hunter & Schmidt, 2000). Because we only included studies with large COSMIN quality, we did not conduct sensitivity analysis for publication bias.

## Results

### *Overview of Studies and TA Concepts*

Of the 12,287 initial search hits, we selected 56 psychometric instruments in 263 studies (reviewers suggested an additional 6 articles). [Figure 1](#) provides a detailed flow-chart of the inclusion and exclusion of studies. (The detailed results and tables can be found on the repository of the Metanoia Institute in London at <http://mirep.metanoia.ac.uk/> or can be requested from the authors.)

## **Quality Assessment of Instruments in Alphabetical Order**

### **Adjective Check List – TA Scales**

*Overview:* The Adjective Check List was developed by Gough and Heilbrun in the 1960s (Gough, 1960; Gough & Heilbrun, 2007). In 1976, a special TA scale was developed (Schaefer, 1976), but this was not used further. In 1980, a scoring system was validated by 15 TA experts for five ego states. This was validated in 100 students and in 154 students for test-retest validity (Williams & Williams, 1980). This instrument consists of 300 adjectives from which respondents select those that they believe describe themselves (or someone else). The scoring system consists of 37 scales within 5 categories: modus operandi (4 scales), need (15 scales), topical (9 scales), transactional analysis (5 scales), and origence-intellectence (4 scales).

*Studies:* This review only includes studies on the TA scales (and not on the other scales) that have been used in the following contexts: students (Akbağ & Kulaksizoğlu, 2018; Akkoyun, 2001; Boholst, 2002, 2003; Bossenmayer, 2011; Emerson, 1990; Emerson et al., 1994; Gough et al., 1979; Schill & Sulewski, 1982; Williams & Williams, 1980; Williams et al., 1983), clinical trials (Itzhar-Nabarro et al., 2009), gaming (Kim, 2015), employees (Sengül, 2020), cross-cultural research (Gough & Heilbrun, 2007), career choice (Baldwin et al., 1986; Mabee, 1990), condom use (Ross, 1988), medical patients (Dobrakowski & Skalski, 2019), addiction (Craig & Olsson, 1988), and prisoners of war and war veterans (Sutker et al., 1989).

*Construct:* The TA Scales assesses five components of ego functioning, which together create an egogram (a tool to assess the differences in importance of various ego states). The Critical Parent scale includes adjectives about evaluation, severity, and skepticism. The Nurturing Parent scale describes adjectives about support, stability, and acceptance. The Adult scale includes adjectives about independence, objectivity, and industriousness. The Free Child scale includes adjectives about playfulness, impulsivity, and self-centeredness. The Adapted Child scale includes adjectives about deference, conformity, and self-discipline.

#### *Evaluation:*

*Good content validity:* Fifteen TA experts rated the items with high interrater reliability (Williams & Williams, 1980); however, the items are limited in their complexity because they are mere adjectives and no longer sentences or descriptions.

*Fair internal consistency:* Two studies showed good internal consistency, with good Cronbach's alpha scores (Williams et al., 1983; Williams & Williams, 1980).

*Fair reliability.* In two test-retest studies, correlations between measurement at different times were good (Williams et al., 1983; Williams & Williams, 1980).

*Unknown measurement error:* There are no benchmark studies to give information on the smallest detectable change, minimal important change, and limits of agreement.

*Good structural validity:* Several studies have confirmed the factor structure (Williams et al., 1983; Williams & Williams, 1980).

*Good hypothesis testing:* These scales were used to test hypotheses in multiple studies with results as hypothesized (Baldwin et al., 1986; Dobrakowski & Skalski, 2019; Emerson et al., 1994; Heilbrun, 1961, 1962; Heilbrun & Sullivan, 1962; Itzhar-Nabarro

et al., 2009; Mabee, 1990; Ross, 1988; Schill & Sulewski, 1982; Sutker et al., 1989; Williams et al., 1983).

Good cross-cultural validity: The Adjective Check List has been translated into 21 languages, although it has not been validated in all of those (<https://www.minidgarden.com/173-adjective-check-list#horizontalTab4>). Several studies included participants from multiple countries. Reviewers have evaluated this instrument as having

considerable promise as a general cross-cultural research tool. The argument is based on: the nature of the task, which seems appropriate in many cultural settings; the versatility of the method in addressing a variety of research questions; the fact that the instrument has been translated into many different languages; and the successful use of the method in recent cross-cultural studies. (Williams et al., 1983, p. 164)

Fair criterion validity: Scores on the TA scales correlate as expected with questionnaires testing other constructs, although none of the studies provide details on specificity and sensitivity (Akbağ & Kulaksızoğlu, 2018; Boholst, 2003; Dobrakowski & Skalski, 2019; Emerson et al., 1994; Kim, 2015; Sengül, 2015; Williams et al., 1983).

Good responsiveness: Change over time has been measured in multiple studies, including several clinical trials indicating good responsiveness (Akkoyun, 2001; Boholst, 2003; Bossenmayer, 2011; Craig & Olsson, 1988; Dobrakowski & Skalski, 2019; Emerson, 1990; Itzhar-Nabarro et al., 2009).

Good interpretability: The Adjective Check List is easy to fill in for participants and easy to score; the five TA scales are easy to interpret, given a general understanding of TA (compare with Craig, 2005).

Overall COSMIN quality: fair to good. More information is needed on measurement error, criterion validity, reliability, and internal consistency.

### ***ANINT-A36 Questionnaire***

Construct: The ANINT-A36 questionnaire (Scilligo, 2000) operationalizes ego states from the perspective of social-cognitive TA (Scilligo, 2005, 2009, following Benjamin, 1974, 1996; Scilligo & Benjamin, 1993). In line with Bowlby's attachment theory, ANINT-A36 explains ego states as complex schemas of mediational processual nature instead of objects or structures. This model describes ego states in terms of different ways of relating to others and to oneself: Free (Emancipate/Assert Oneself/ Individuation with Love), Protective (Control/Submit/Enmeshment with Love), Critical (Control/Submit/Enmeshment with Hate), or Rebellious (Emancipate/Assert Oneself/ Individuation with Hate) (De Luca & Tosi, 2011; Scilligo, 2009).

Studies: Following the initial studies (Scilligo, 1999, 2000), Bastianelli et al. (2004) and Focà et al. (2005) showed in approximately 1000 participants how the scores correlated with psychological well-being. The factor structure and relationships of some scales with other questionnaires were confirmed in other studies (Bastianelli et al., 2006; Ceridono et al., 2005; Ceridono et al., 2008; De Nitto et al., 2008; Scilligo, 2005). Ceridono and Viale (2013) showed how social-cognitive transactional analysis created changes as expected on this scale in 288 clients. These studies indicate good interpretability, content validity, internal consistency, reliability, hypothesis testing, and criterion testing, although mainly in students. No information is available on cross-cultural validity (studies are only available in Italian), measurement error, and responsiveness.

Overall COSMIN quality: fair to good.

### ***Comprehensive Life Script Interview***

Construct: McCormick and Pulleyblank (1979) developed a comprehensive life script interview and matrix that includes constructive as well as destructive messages and rewarding as well as self-defeating early decisions.

Evaluation: There are no empirical studies available for this instrument. Therefore, no conclusions can be derived about the quality of COSMIN criteria except for the content validity and interpretability, which seem fair as the article from McCormick and Pulleyblank clearly explained how they developed this interview and how it could be used.

Overall COSMIN quality: poor.

### ***Decision Scale***

Construct: Woollams (1979) developed the Decision Scale with a 0-to-10 range to assess script information, the severity of decisions, favored drivers, and clients' strengths.

Evaluation: There are no empirical studies available. Therefore no conclusions can be derived about the quality of COSMIN criteria.

Overall COSMIN quality: poor.

### ***Developmental Script Questionnaire***

Construct: Levin Landheer (1981) developed a questionnaire in the form of a structured interview to examine a client's script in chronological stages and ego states.

Evaluation: The complex theory on which the questionnaire is based has insufficient empirical evidence. There are no empirical studies available. Therefore, no conclusions can be derived about the quality of COSMIN criteria.

Overall COSMIN quality: poor.

### ***Drama Triangle Test***

Construct: Pasternak and Fain (1984) developed a test for the drama triangle that is based on Karpman's (1968) theory of switching roles between Victim, Persecutor, and Rescuer.

Evaluation: There is only one empirical study in 90 students available indicating how the drama triangle role predicts behavior of participation in other experiments. This study suggested fair content validity, internal consistency, hypothesis testing, criterion validity, and responsiveness.

Overall COSMIN quality: poor.

### ***Drego Injunctions Scale***

Construct: The Drego Injunction Scale was developed to test injunctions (Drego, 1994).

Evaluation: Three studies have used the Drego Injunction Scale. Drego (1994) developed and tested the scale in a publication that we were unable to access. Björk (1997) published a study of 200 students showing that the scale did not correlate as expected with other instruments but had some validity in measuring hamartic life

scripts. Shustov et al. (2016) conducted a study with 190 men dependent on alcohol; they found clinically relevant injunctions.

Overall COSMIN quality: poor to fair.

### ***Driver Questionnaire***

Construct: This questionnaire from Falkowski and Munn (1989) explores five common drivers ("Be perfect," "Please others," "Hurry up," "Be strong," and "Try hard") with yes/no answer options.

Studies: There is one study showing how 11 participants in a TA seminar assigned statements to each of the drivers in a reliable way.

Overall COSMIN quality: poor.

### ***Drivers Checklist***

Construct: Hazell (1989) developed a 50-item checklist to test the drivers, including "Be pleasing," "Be right," "Be strong," "Hurry up," "Try hard," upsets, and driver issues.

Studies: Hazell described the validation of this checklist with 120 participants, which suggested fair content validity, internal consistency, hypothesis testing, and criterion validity and responsiveness.

Overall COSMIN quality: poor.

### ***Ego State Instrument***

Construct: Doelker and Griffiths (1984) developed this instrument to provide a profile of an individual's personality for five ego state functions (Nurturing Parent, Critical Parent, Adult, Free Child, and Adapted Child), primarily to be used as a self-awareness instrument.

Evaluation: Doelker and Griffiths (1984) applied the instrument with 49 students, which suggested fair content validity and criterion consistency.

Overall COSMIN quality: poor.

### ***Ego State Inventory***

Construct: The Ego State Inventory (McCarley, 1975) consists of 52 cartoon drawings of two or more persons in social situations. The ratings indicate an individual's dominant ego state (Nurturing Parent, Critical Parent, Adult, Free Child, Adapted Child).

Evaluation: McCarley (1975) showed that the Ego State Inventory seems to have good interpretability, content validity, internal consistency, reliability, hypothesis testing, and criterion testing in a study with 500 participants from varied backgrounds. No information is available on cross-cultural validity, measurement error, and responsiveness.

Overall COSMIN quality: poor to fair.

### ***Ego State Paper-and-Pencil Test by L'Abate***

Construct: L'Abate (1978) conducted three studies to develop a paper-and-pencil test for assessing ego states (Punitive Parent, Nurturing Parent, Adult, Rebellious Child, and Adaptive Child).

Evaluation: The three studies included 16 teachers and 74 and 40 undergraduates. These studies indicated good content validity, hypothesis testing, and criterion validity. On the other COSMIN criteria, no information was available.

Overall COSMIN quality: poor.

### ***Ego State Profile***

Construct: Heyer (1979) developed the Ego State Profile Questionnaire with 50 items to measure the energy distribution of the five ego states (Critical Parent, Nurturing Parent, Adult, Free Child, and Adapted Child).

Evaluation: Good content validity: In two studies—one with an unknown sample size and one of 1044 adults—the items received high consensus ratings (Heyer, 1977, 1979). Good internal consistency: Two studies showed good internal consistency with good Cronbach's alpha scores (Crowley, 1978; Hadesman, 2004; Heyer, 1977, 1979). Fair reliability: In two test-retest studies, correlations between measurement at different times were fair to good (Heyer, 1977, 1979). Unknown measurement error: There are no benchmark studies to give information on the smallest detectable change, minimal important change, and limits of agreement. Good structural validity: Several studies have confirmed the factor structure (Crowley, 1978; Hadesman, 2004; Heyer, 1977, 1979). Good hypothesis testing: These scales were used to test hypotheses in multiple studies with results as hypothesized in students, prisoners, civil servants, alcoholics, and battered women (Crowley, 1978; Hadesman, 2004; Heyer, 1977, 1979; Roark & Vlahos, 1983). Poor cross-cultural validity: The questionnaire is only available in English. Fair criterion validity: Scores on the TA scales correlate as expected with questionnaires testing other constructs, although none of the studies provide details on specificity and sensitivity (Crowley, 1978; Heyer, 1977, 1979). Fair responsiveness: Change over time has been measured in multiple studies, including several clinical trials, indicating fair to good responsiveness (Hadesman, 2004; Roark & Vlahos, 1983). Good interpretability: The Ego State Profile seems easy to fill in for participants and easy to score; the TA scales are easy to interpret given a general understanding of TA.

Overall COSMIN quality: fair. More information is needed on measurement error, criterion validity, reliability, and internal consistency.

### ***Ego State Questionnaire***

Construct: Loffredo et al. (2002) developed this 40-item questionnaire to give an indication of the strength of the internal Parent, Adult, and Child, with a primary focus on their relative relationships with each other.

Evaluation: Two hundred students participated in their original study (Loffredo et al., 2002), which was followed up by 300 participants in their validation study (Loffredo et al., 2004). These studies suggested good interpretability and showed good content validity, internal consistency, and factor structure. No information was available about reliability, measurement error, hypothesis testing, cross-cultural and criterion validity, and responsiveness.

Overall COSMIN quality: poor to fair.

### ***Ego State Questionnaire by Daley***

Construct: This questionnaire was developed by Daley (1973) to operationalize ego states with 40 groups of three sentences in each (Critical Parent, Nurturing Parent, Adult, Free Child, and Adapted Child).

Evaluation: Daley (1973) applied the questionnaire with 1044 adults in the general population with diverse backgrounds. This questionnaire proved predictive of electoral votes. Reliability statistics and information on factorial structure and criterion validity seem fair in this study. On face value, the interpretability of this scale seems fair. Hypothesis testing showed good preliminary results in this study because the questionnaire predicted electoral behavior. No information is available on cross-cultural validity and responsiveness.

Overall COSMIN quality: poor to fair.

### ***Ego State Questionnaire by Hay***

Construct: Hay (1996) developed this 21-item questionnaire to indicate proportions of Internal Parent, Internal Adult, and Internal Child.

Evaluation: The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish (Juliehay.org). However, there are no studies available on psychometric properties.

Overall COSMIN quality: poor.

### ***Ego State Scale***

Construct: Thorne and Faro (1980) developed the Ego State Scale to measure Kahler's eight functional ego states model (positive Nurturing Parent [+NP], negative Nurturing Parent [-NP], positive Critical Parent [+CP], negative Critical Parent [-CP], Adult [A], positive Adapted Child [+AC], negative Adapted Child [-AC], and Free Child [FC]) and correlate this with measures of psychopathology.

Evaluation: This study suggested good interpretability and good content criterion validity because it was validated in a study in 167 students seeking psychotherapy. Results showed that -NP is more highly correlated with pathology than - CP; +AC is not significantly related to a lack of pathology; and + CP appears to play a greater role in a lack of pathology. No information was available about other COSMIN criteria.

Overall COSMIN quality: poor.

### ***ESPERO Questionnaire***

Construct: Scilligo and colleagues developed the 120-item ESPERO Questionnaire to measure 5 drivers and 15 injunctions (Scilligo, 1999; Scilligo & Bastianelli, 1999; Scilligo et al., 1999).

Studies: The ESPERO Questionnaire was used in three initial publications (Crea, 2014; Scilligo & Bastianelli, 1999; Scilligo et al., 1999). The factor structure and relationships of some scales with other questionnaires were confirmed in other studies (Bastianelli et al., 2006; Bastianelli & Ceridono, 2013; Ceridono et al., 2005; Ceridono et al., 2008; De Nitto et al., 2008; Scilligo, 2005).

Evaluation: These studies indicated good interpretability, factor structures, and content and criterion validity in multiple populations. No information was available about other COSMIN criteria.

Overall COSMIN quality: poor to fair.

### ***Freehand Script Maze***

Construct: Buryška (1976) described the Freehand Script Maze as

a tool to facilitate script awareness on the part of both client and therapist. It provides an overview of the script in visual form concentrating on the functional aspect: "How am I doing now?" or "How have I been acting?" ... The maze pictures the Little Professor's task of finding a survival route through a thicket of injunctions and counterinjunctions having varying degrees of potency and often conflicting content. (p. 160)

The Freehand Script Maze asks individuals to respond to injunctions and their corresponding priorities: Don't Be (survival), Don't Be Who You Are (individuation), Don't Grow Up (maturation), Don't Make It (effectiveness), Don't Be Close (intimacy), and Don't Have Fun (play).

Evaluation: The items seem to have fair content validity and interpretability, but Hardy (1977) and Hardy and Best (1985) conducted test-retest studies that did not indicate sufficient reliability. There was no information on other quality criteria.

Overall COSMIN quality: poor.

### ***Group Ego State Measure (GEM)***

Construct: Swede (1978) developed an operationalized definition of ego states and transactions: Parent (P), Adult (A), Child (C), Critical Parent (CP), Nurturing Parent (NP), Adapted Child (AC), Little Professor (LP), and Nurturing Child (NC) and transactions analyzed as either complementary or crossed. These definitions were developed into a Group Ego State Measure scorecard (Swede, 1978).

Evaluation: This measure directly used the operationalized definitions of Swede (1978), and it was used once. Four judges filled in the GEM scorecard for 30 selections of group sessions between 7 patients and 2 TA therapists. The interrater reliability was large (62%–89%). However, for 22% of the three-ego-state category judgments, 29% of the six-ego-state category judgments and 19% of the transaction judgments there was poor agreement. In the 60 diagnoses for ego states, there was no identification of Controlling Parent and only one of Natural Child. Chance judgments alone would have resulted in an average of 10 judgments per category.

Overall COSMIN quality: poor.

### ***Joines Personality Adaptation Questionnaire***

Construct: Joines (2002a) developed the Joines Personality Adaptation Questionnaire (JPAQ) with 72 yes/no items. This is a set of personality profiles originally designed by Kahler under the name "Process Com" and later developed by Joines and Stewart. The basic idea is that there are 50 ways in which an individual can fit in childhood to psychologically survive and meet the expectations of their parents (personality adaptations). These elements come together to form six adaptations: Enthusiastic/Over-Reactor, Responsible/Workaholic, Brilliant/Skeptic, Creative/Daydreamer, Playful/

Resister, and Charming/Manipulator. The first three adjustments are called “survival” and the other three “performance.”

**Evaluation:** Fair content validity: Several studies explain the development of the questionnaire and connect it with other studies and theories (Joines, 2000b). The original questionnaire was validated on an American sample composed of patients and therapists (Joines, 1986; 2002a, 2002b). This was later translated and validated in Korean (Oh, 2018) and Italian (Romaniello, 2018). Good content validity, test-retest reliability, factor structure, and hypothesis testing: All studies reported fair to good content validity, test-retest reliability, factor structure, and hypothesis testing. Fair to good cross-cultural validity: The scale was translated into Korean, Italian, and Russian (Oh, 2018; Romaniello, 2018), but information was missing on the translation process. No information was available on measurement error, criterion validity, and responsiveness. Good interpretability: Scores are easy to interpret with the help of a manual (Joines, 2002b).

Overall COSMIN quality: poor to fair.

### *Life Position Questionnaire*

**Construct:** This Russian questionnaire gives an indication of the client’s life position. Their position can be positive or negative toward themselves (I+, I–), and positive or negative toward others (U+, U–), which offers four options (I+/U+, I+/U–, I–/U+, I–/U–). These are sometimes interpreted as Winner, Loser, Pessimist, and Inferiority Complex.

**Evaluation:** Two studies have been conducted (Rezanovich et al., 2019; Zubenko, 2019) in respectively 105 female students and 136 employees over 50 years old who engaged in a physical activity trial. The study findings indicated good content validity, internal consistency, test-retest reliability, structural testing, hypothesis testing, and interpretability. No information was available on other psychometric aspects.

Overall COSMIN quality: poor.

### *Life Position Scale*

**Construct:** Boholst (2002) developed the 20-item Life Position Scale to operationalize positive or negative views toward themselves (I+, I–) and positive or negative views toward others (U+, U–).

**Studies:** The original study (Boholst, 2002) included 95 participants, followed by a validation study in 189 students (Boholst et al., 2005). The instrument was translated and validated in Turkish (Isgor et al., 2012; Karaba, 2019), Macedonian (Jovancevic, 2017), and Filipino (Kintanar & Bernardo, 2013). The questionnaire was also applied and validated in the context of attachment (Mrda & Ribic, 2020), schizophrenia (Samardžic & Novakovic, 2018), morality (Turğut & Tanhan, 2019), alcohol dependent individuals (Hadži-Pešić et al., 2014), depression and paranoia (Budiša et al., 2012), cynicism and hope (Bernardo, 2013), core beliefs (Afshar-Jalili, & Ghaleh, 2018), partner relationships (Ašanin & Ognjanović, 2017), and conflict escalation and violence in education (Morris, 2006).

**Evaluation:** Good content validity: The development of the scale has been described in detail, including showing how the items were derived from theory (Boholst, 2002).

Good internal consistency: Several studies tested Cronbach's alpha and showed good consistency. Good test-retest reliability: Some studies included test-retest measurement and indicated good results. Good factor structure: Several studies show two factors: negative/positive self-items and negative/positive other-items. Good hypothetical testing: These scales were used to test hypotheses in multiple studies with results as hypothesized. Good criterion validity: The scale correlates as expected with other questionnaires related to such factors as attachment, morality, psychiatric symptoms, core beliefs, and relationships. Fair to good cross-cultural validity: The questionnaire was translated and validated into multiple languages, although details about some translations were unavailable. Good interpretability: The scores were easy to interpret.

Overall COSMIN quality: fair to good. More information is needed on measurement error, responsiveness, and other languages.

### ***Manager Working Styles Questionnaire***

Construct: Based on work by Kahler (1975, 2008), Hay (1992) introduced five working styles as labels for positive aspects of drivers: "Hurry up," "Be perfect," "Please people," "Try hard," and "Be strong." On this basis, Hay (1992) developed the Working Styles Questionnaire, which was adjusted for managers to form the Manager Working Styles Questionnaire.

Evaluation: The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish (Juliehay.org). However, there are no studies available on psychometric properties.

Overall COSMIN quality: poor.

### ***Marital Role Expectations Based on the Drama Triangle***

Construct: Bevez (2017) developed a questionnaire to operationalize marital role expectation based on Karpman's (1968) drama triangle (see above).

Evaluation: This questionnaire was developed in a sample of 250 participants, which included correlations with other questionnaires that had received little validation before.

Overall COSMIN quality: poor.

### ***Ohlsson, Björk, and Johnsson Script Questionnaire***

Construct: Ohlsson et al. (1992) developed a script questionnaire with 43 questions and a script checklist. This Script Questionnaire was meant as a comprehensive instrument to examine the life script and includes items from Berne's (1972) script apparatus (prescription/counterscript slogans, injunction stopper, script decision, parental pattern, script payoff, curse, demon, internal release, come-on, seduction, and permission) and Steiner's (1975) Script Checklist (counterscript counterinjunction, injunction attribution, decision, program, racket, game, position, tragic ending, life course, pastime, payoff, stamp, sweatshirt, racket, somatic component, therapist's role, mythical hero, and antithesis).

Evaluation: Several studies described the development of the Script Questionnaire and how this integrates with previously developed instruments, indicating large

content validity (Johnsson, 2011; Ohlsson et al., 1992). Johnsson (2011) explored the reliability and validity of the Script Questionnaire via independent assessment of 10 clients of a year-long transactional analysis therapy group conducted by the author and two professional colleagues. Moderately high interassessor reliability was found, but intra-assessor reliability was low for the independent assessors. Agreement increased for script components “primary injunction from father,” “racket feeling,” “escape hatch,” “driver from father,” and “driver from mother.” The overall correlation is 56% and relatively evenly distributed for each client.

Overall COSMIN quality: poor.

### ***Parent-Adult-Child Projective Drawing Task***

Construct: Turner (1988) developed the Parent-Adult-Child Projective Drawing Task, which is a projective test in which participants are asked to draw a parent, adult, and child. An interpretation method was offered without clear validation.

Evaluation: The test depends on a nonvalidated interpretation method. The task was described in two cases.

Overall COSMIN quality: poor.

### ***Permission Wheel***

Construct: Gysa Jaoui (1979) developed a graphical representation of the main limits of a person’s life script. She called this The Permission Wheel (‘la roue des permissions’) because the circular shape of the diagram reveals the size of a person’s permission or freedom in various areas of living. The wheel consists of 10 concentric circles, each of which represents 10% permission. Each of the circles is cut into four main segments that are subsequently divided into 4 or 5 subsegments representing “me and myself,” “me and my feelings,” “me and the world,” and “me and others” (Hawkes, 2007).

Evaluation: Jaoui (1979) and Hawkes (2007) described how the Permission Wheel is derived systematically from TA theory and has good content validity. They described several case studies, but no further research is available.

Overall COSMIN quality: poor.

### ***Personal Orientation Scale for Teachers***

Construct: The Personal Orientation Scale for Teachers is a 28-item questionnaire to identify four scores representing life positions (Fine, 1975; Fine & Poggio, 1977).

Evaluation: The Personal Orientation Scale for Teachers was tested in 22 professionals who were asked to remember a teacher (Fine, 1975; Fine & Poggio, 1977), suggesting good content validity and consistency. Information on other psychometric aspects was absent.

Overall COSMIN quality: poor.

### ***Personal Response Questionnaire***

Construct: The Personal Response Questionnaire by Kealy (1975) was developed to operationalize ego states (Critical Parent, Nurturing Parent, Adult, Free Child, Adapted Child, Natural Child).

Evaluation: The questionnaire was developed and tested in a sample of 508 students and indicated good content validity, internal consistency, structural validity, and hypothesis testing. No information was available on test-retest reliability, measurement error, cross-cultural validity, criterion validity, responsiveness, and interpretability.

Overall COSMIN quality: poor.

### ***Personal Styles Questionnaire***

Construct: Hay (1996) developed the Personal Styles Questionnaires with 40 questions to identify proportions of time in Controlling or Nurturing Parent, Natural or Adapted Child, or Functional Adult (Juliehay.org). The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish.

Evaluation: No studies on psychometric properties are available.

Overall COSMIN quality: poor.

### ***Price Ego State Scale***

Construct: Price (1975) developed a Likert-type scale to assess ego states (Critical Parent, Nurturing Parent, Adult, Adapted Child, and Free Child).

Evaluation: Price (1975) described findings from three studies: 15 teachers, 60 students, and 261 students. Good content validity: The scale showed large agreement between raters. Good consistency: Cronbach's alpha were good for all subscales. Poor test-retest reliability: correlations varied between .21 and .61. Validity: The scoring by teachers of students did not correlate with student scores. Information on other psychometric aspects are absent.

Overall COSMIN quality: poor.

### ***Q Model Checklist***

Construct: Zerlin and Zerlin (2004) developed an 18-item checklist and visualization to describe well-being processes over time on biopsychosocial, philosophical-theological, educational-technological, and socio-anthropological levels. The test results could be used to identify growth and enrichment, pathology, and estrangement.

Evaluation: There is no empirical study available.

Overall COSMIN quality: poor.

### ***Rehabilitation Checklist***

Construct: Mackey (1977) developed the Rehabilitation Checklist to test vocational rehabilitation focused on Parent, Adult, and Child.

Evaluation: There is no empirical study available.

Overall COSMIN quality: poor.

### ***Schema Mode Inventory (SMI)***

Construct: Schema Therapy is a type of cognitive psychotherapy that has integrated ideas from other therapeutic approaches (Young et al., 2003). The TA concept of ego states was integrated into schema therapy and named "schema modes" (Edwards & Arntz, 2012). Schema modes represent the moment-to-moment emotional and

cognitive states and coping responses that can be triggered and shifted by emotional events and that can particularly be seen in individuals with personality disorders (Lobbestael et al., 2006, 2008; Young et al., 2003). Young et al. (2003) identified 10 schema modes that can be categorized in four groups: maladaptive Child, dysfunctional Coping modes (overcompensation, avoidance, or surrender), dysfunctional Parent, and Healthy Adult Mode. An international group developed the Schema Mode Inventory (SMI) (Young et al., 2007), which purports to measure 16 schema modes. Because of its length, this questionnaire was not frequently used, and therefore a short version was developed (Lobbestael et al., 2010)). The short SMI consists of 118 items with the following scales: vulnerable child, angry child, enraged child, impulsive child, undisciplined child, happy child, compliant surrender, detached protector, detached self-soother, self-aggrandizer, bully and attack mode, punitive parent, demanding parent, and healthy adult.

Evaluation: We found 45 studies using the SMI with 15,071 participants (see details in the repository of the Metanoia Institute in London at <http://mirep.metanoia.ac.uk/>). These studies were evaluated for their quality of describing SMI. Overall, the studies show that the SMI has good content validity, good internal consistency, good test-retest reliability, good structural validity, good hypothesis testing (convergent/divergent) validity, good criterion validity, good responsiveness, and good interpretability. More information is needed on measurement error, and although the questionnaire has been translated into six languages, validation in other languages is needed. Furthermore, several qualitative and experimental studies show the applicability of the SMI (Lobbestael et al., 2009; Pugh, 2015; Tait, 2019).

Overall COSMIN quality: good. Translations and validations in other languages are needed. These findings are in line with the instrument review from Matos et al. from 2018.

### **Script Apparatus (Berne, 1972) and Script Check List (Steiner, 1974)**

Construct: Berne (1972) defined a script as an ongoing program developed in early childhood under parental influence, one that directs the individual's behavior in the most important aspects of their life. The script or life plan is preconscious (Berne, 1961) and can be ascertained by asking appropriate questions. The plot, characters, and course of events can be derived from memories of favorite childhood fairy tales, heroes, and games; adolescent heroes; early memories; fantasies of death; and other questions. Berne (1972) developed the Script Check List, which mainly focused on har-martian scripts. Steiner (1969, 1974, 1975) extended Berne's work with banal scripts. Following an idea from Karpman (1968), Steiner supplemented his visual matrix with a form in which other scripting components were listed. This is known as a Script Checklist (Steiner, 1969). Berne's (1972) script apparatus contained multiple components (prescription/counterscript slogans, injunction stopper, script decision, parental pattern, script payoff, curse, demon, internal release, come-on, seduction, and permission), which Steiner (1975) elaborated (counterscript counterinjunction, injunction attribution, decision, program, racket, game, position, tragic ending, life course, pastime, payoff, stamp, sweatshirt, racket, somatic component, therapist's role, mythical hero, and antithesis).

Evaluation: Although Berne's and Steiner's checklists are often applied in clinical practice, no systematic empirical studies are available on these. As described earlier here, Ohlsson et al. (1992) included Berne's and Steiner's concepts in their Script Questionnaire, which they tested but which had poor validity and reliability.

Overall COSMIN quality: poor.

### ***Script Decoder***

Construct: Wahking (1979) developed a method to help clients identify the meaning of their scripts and give them a brief descriptive name. The method consists of a table with Berne's six types of scripts (Never, Always, Until, After, Over and Over, Open Ended) on the x axis and Steiner's three styles (No Love, No Joy, No Mind) on the y axis. Together this provides 18 patterns of script behavior.

Evaluation: At face value, the Script Decoder seems to be a good operationalization of the relationship between Berne's and Steiner's scripts questions. However, the only evidence are examples of two clients who used this tool as described by Wahking (1979).

Overall COSMIN quality: poor.

### ***Script Injunctions Scale***

Construct: Gavrilov-Jerkovic et al. (2010) developed the 71-item Script Injunction Scale to measure the degree and type of the 12 script injunctions that a person was exposed to during childhood and that they accepted as part of their self-image: Don't Feel, Don't Exist, Don't Be Well, Don't Be a Child, Don't, Don't Think, and Don't Be Close.

Evaluation: One study was conducted with 100 adults with psychiatric symptoms (Gavrilov-Jerkovic et al., 2010). It showed good overall reliability but poor reliability for subscales and good hypothesis validity in that scores related as expected with psychiatric symptoms. Information on other psychometric aspects is absent.

Overall COSMIN quality: poor.

### ***Script Questionnaire***

Construct: White and White (1986) developed the 9-item Script Questionnaire to help individuals construct their own script matrix.

Evaluation: There is no empirical study available.

Overall COSMIN quality: poor.

### ***Stroke Myths Questionnaire***

Construct: Hay developed the Stroke Myths Questionnaire with 15 questions to indicate which of the stroke myths identified by Steiner are in operation: Don't give, Don't accept, Don't reject, Don't ask for, and Don't stroke yourself ([www.juliehay.org](http://www.juliehay.org)). The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish.

Evaluation: There is no empirical study available.

Overall COSMIN quality: poor.

### ***Stroking Questionnaire***

Construct: The 8-item Stroking Questionnaire was developed to give an indication of the stroking profile of the client (Avary, n.d.).

Evaluation: There is no empirical study available.

Overall COSMIN quality: poor.

### ***Teacher Ego States Observation Instrument***

Construct: Kenney and Lyons (1979) developed the Ego States Observation Instrument to observe naturally occurring teacher ego state behavior.

Evaluation: The instrument was used in the observation of 14 teachers but did not show as sensitive and specific (Kenney & Lyons, 1979).

Overall COSMIN quality: poor.

### ***Temple Index of Functional Fluency (TIFF)***

Construct: This 108-item questionnaire was developed to test ego states (Temple, 2002, 2004): Parent (negative, positive, controlling, or caring), Adult (called “accounting mode”), and Child (negative, positive, socialized, natural). There are several additional subscales and an overall Fluency Index, which is the amount of positive Parent/Child scores divided by the amount of negative Parent/Child scores.

Evaluation: This questionnaire has only been tested in one quantitative and qualitative study in 300 participants (Temple, 2002) but has been applied more often ([www.functionalfuency.com](http://www.functionalfuency.com)). This indicated good content validity, good internal consistency with large Cronbach’s alphas, test-retest reliability, good factor structure, and correlations with other concepts and questionnaires as expected (good hypothesis testing and criterion validity). Information on measurement error, cross-cultural validity, and responsiveness were absent. The author has provided clear information to facilitate the interpretation of scores, creating good interpretability ([www.functionalfuency.com](http://www.functionalfuency.com)).

Overall COSMIN quality: poor to fair.

### ***Tokyo University Egogram***

Construct: The 60-item Tokyo University Egogram (TEG) tests five ego states: Critical Parent, Nurturing Parent, Adult, Free Child, and Adapted Child. The first edition was developed in 1984, the second edition was published in 1993, and the third edition was published in 2018. The questionnaire has been widely used in various fields, such as medical care, education, and occupational therapy.

Evaluation: We found 51 studies that used the Tokyo University Egogram in 16747 participants (see details in the repository of the Metanoia Institute in London at <http://mirep.metanoia.ac.uk/>). Most studies used the questionnaire to describe a population and did not describe psychometric details. However, the available studies indicate that the Tokyo University Egogram has good content validity, good internal consistency, good test-retest reliability, good measurement error, good structural validity, good hypothesis testing (convergent/divergent) validity, good criterion validity, good responsiveness, and good interpretability. The Tokyo University Egogram has poor cross-cultural validity because it has only been validated in Japanese and Chinese.

Overall COSMIN quality: good. Translations and validations in other languages are needed.

### ***Transactional Analysis Checklist***

Construct: The Transactional Analysis Checklist (Kahn, 1972) tests the four life positions identified by two continua: “I”-items and “You”-items. The checklist is filled in by an interviewer who conducts a structured interview with a participant.

Evaluation: The checklist has been examined in one study with 30 probationers or relatives of probationers (Kahn, 1972). The content validity and interpretability seem good on the basis of the conceptual development described in Kahn (1972). Interrater reliability is good, and as expected, the I-count and the You-count were not related. Information on other psychometric properties is absent.

Overall COSMIN quality: poor.

### ***Transactional Analysis Life Position Survey***

Construct: The Transactional Analysis Life Position Survey (Kramer, 1978) tests the four life positions identified by two continua: “I”-items and “You”-items.

Evaluation: The checklist was examined in one study with 30 counselors (Kramer, 1978). The content validity and interpretability seem good on the basis of the conceptual development described in Kramer (1978). Interrater reliability is good, and as expected, the I-count and the You-count were not related. Information on other psychometric properties is absent.

Overall COSMIN quality: poor.

### ***Transactional Analytic Ego Constancy States***

Construct: The Transactional Analytic Ego Constancy States (Butler, 1969) tests the following ego states: Nurturing Parent, Prejudiced Parent, Internal Parent (i.e., conscience and values), External Parent (i.e., interaction with others), Adult, and Child.

Evaluation: The checklist was examined in one study with a mixed sample of 200 participants (Butler, 1969). The content validity and interpretability seem good on the basis of the conceptual development described in Butler (1969). There is good internal consistency (Cronbach’s  $\alpha$ ), structural validity (factor structure), and hypothesis testing validity (comparison between subgroups). Information on other psychometric properties is absent.

Overall COSMIN quality: poor.

### ***Transactional Behavior Questionnaire***

Construct: The Transactional Behavior Questionnaire (Brennan & McClenaghan, 1978) measures life positions, ego states, stroking behaviors, and intimacy (18 scales in 95 items).

Evaluation: The checklist was developed in three studies: 165 college students, 74 TA group members, and 1231 college students (Brennan & McClenaghan, 1978). The content validity and interpretability seem good on the basis of the conceptual development described in Brennan and McClenaghan (1978). It has good internal consistency as shown by Cronbach’s  $\alpha$ , good test-retest reliability, and good factor structure.

Hypothesis testing validity seems good because the questionnaire has been used and validated in a study with older people (Mills, 1986) and a study on the effects of stroking in depressed men (Fetsch & Sprinkle, 1982). Information on other psychometric properties is absent.

Overall COSMIN quality: poor to fair.

### ***Transgenerational Script Questionnaire/Instrumento De Codependencia (ICOD)***

Construct: The 30-item Transgenerational Script Questionnaire (Noriega, 2004), referred to in Spanish as Instrumento De Codependencia (Noriega & Ramos, 2002), helps to clarify codependence transgenerational scripts with four subscales: denial mechanism (discounting), incomplete identity development (unresolved secondary symbiosis), emotional repression (Don't Exist, Don't Feel, Don't Think, and Don't Be a Child injunctions), and rescuer orientation.

Evaluation: The content validity seems good in that concepts underlying the study have been developed via case studies (Fornaro, 2019; Monje Cubas, 2019); the conceptual development was described in Spanish (Noriega & Ramos, 2002). Good internal consistency and factor structure were shown in 830 women attending consultation (Noriega, 2004). Hypothesis testing and criterion testing were good in that associations were found as expected between the scores and early affective loss, domestic violence, family history of alcoholism, partner with problems with alcoholism, abusive partner, and submissive feminine behavior with the partner. Information on other psychometric properties is absent.

Overall COSMIN quality: poor to fair.

### ***Windows on the World Questionnaire***

Construct: Hay (1996) developed the 8-item Windows on the World Questionnaire to indicate proportions of time spent in various life positions and filtering reality through various "windows."

Evaluation: The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish (Juliehay.org). However, there are no studies available on psychometric properties.

Overall COSMIN quality: poor.

### ***Working Styles Questionnaire***

Construct: Based on the work of Taibi Kahler, Hay (1992, 1996) used the term "working style" as a label for the positive aspects of drivers reflected in five characteristic styles reflecting the "driven" quality when people are under stress: "Hurry up," "Be perfect," "Please people," "Try hard," and "Be strong."

Evaluation: The questionnaire has been translated into Bulgarian, Dutch, German, French, Italian, Macedonian, Polish, Romanian, Russian, Serbian, Spanish, and Turkish (Juliehay.org). However, information on the translation process is missing, and most languages do not have validation studies. Pavlovska (2013) and Kasyanov (2014) used the questionnaire in samples in Russia and Macedonia. Although these studies suggest good reliability and structural and criterion validity, their samples were relatively small and not representative of the general population.

Overall COSMIN quality: poor.

### **ZESUI Inventory**

Construct: Brajovic Car, Pešic et al. (2012) developed the 62-item ZESUI in Serbian to measure ego states, Type I/II/III impasses, and the three drama triangle roles of Rescuer, Persecutor, and Victim.

Evaluation: Brajovic Car, Pešic et al. (2012) described how they tested different versions of the scale with 150 participants. The scale has good content validity and interpretability, being well grounded and interpreted within TA concepts. The final version was validated in 307 mainly young people, suggesting good reliability and structural and criterion validity.

Overall COSMIN quality: poor.

### **Zulliger Test Interpreted From a TA Perspective**

Construct: The Zulliger Test developed by Zulliger and Salomon (1970) is a variation of the projective Rorschach inkblot technique. Bunchaft et al. (2002) interpreted the findings from this test from a TA perspective.

Evaluation: Bunchaft et al. (2002) administered the test to 33 patients who were receiving TA psychotherapy. Their responses were blindly and independently analyzed by two specialists in the Zulliger Test, and the results were compared with information from psychological profiles prepared by the participants' psychotherapists. The test has poor content validity in that theoretical foundations of the interpretation of the Zulliger Test include several unproven assumptions, such as how participants could project TA concepts. The interrater reliability between the two raters was good. Information is missing on other psychometric properties.

Overall COSMIN quality: poor.

## **Validation of TA Concepts by Psychometric Instruments**

As described in the previous section, the following questionnaires had good, fair to good, or fair quality according to COSMIN criteria: Schema Mode Inventory, Tokyo Egogram, the Adjective Check List, ANINT-A36, and the Life Position Scale. Except for the latter, these scales operationalize the ego states (Parent, Adult, Child and Critical Parent, Nurturing Parent, Free Child, and Adapted Child). In a slight adjustment, the ANINT-A36 operationalizes Free, Protective, and Critical ego states. The Schema Mode Inventory added more modes than other scales; these extra modes were not explicitly derived from TA theory but from schema therapy. The Life Position Scale operationalized the positive and negative positions that individuals could have toward themselves (I+, I-) and others (U+, U-). Other questionnaires had poor to fair COSMIN-quality; their relatively low quality was mainly due to a lack of studies, and further research could confirm their validity and reliability. These questionnaires include instruments that operationalized ego states in a way similar to the previously mentioned instruments with good or fair quality (ANINT, TIFF, Daley Ego States Scale, Ego State Inventory) and life position (ANINT, Transactional Behavior Questionnaire). Other scales measure injunctions (Drego Injunction Scale, ESPERO), personality adaptations (Joines

Personality Adaptation Questionnaire), stroking (Transactional Behavior Questionnaire), or codependence transgenerational scripts (Transgenerational Script Questionnaire). On the basis of these studies, we conclude that there is strong empirical evidence for the identification of ego states (Parent, Adult, Child), the basic second-order model ego states (Critical Parent, Nurturing Parent, Free Child, and Adapted Child), and the four life positions (I+/U+, I-/U-, I+/U-, I-,U+). Instruments that operationalized other TA concepts did not have equally strong quality.

## Meta-Analyses

We conducted three meta-analyses on studies that used instruments with good, fair to good, and fair overall COSMIN-quality in order to examine correlations with other instruments and to present the average scores in different populations.

The first meta-analysis showed in 51 studies that the scores on the Schema Mode Inventory, the Tokyo Egogram, and the Adjective Check List were, on average, different between participants with a diagnosis of an Axis I and/or an Axis II disorder compared to those without such a diagnosis. Individuals with an Axis I or Axis II diagnosis had significantly larger scores on Critical, Punitive, or Demanding Parent (Cohen's  $d = .55$ , 95% CI =  $.32-.79$ ,  $p < .01$ ,  $N=49$  studies) and on Unadjusted, Vulnerable, Angry, Enraged, Impulsive, or Undisciplined Child (Cohen's  $d = .47$ , 95% CI =  $.27-.68$ ,  $p < .01$ ,  $N=46$  studies) as well as on other negative coping styles as measured with the Schema Mode Inventory (Cohen's  $d = .41$ , 95% CI =  $.24-.58$ ,  $p < .05$ ,  $N=17$  studies). They also had lower scorers on Healthy Adult (Cohen's  $d = .53$ , 95% CI =  $.33-.73$ ,  $p < .01$ ,  $N=49$  studies) and Free or Happy Child (Cohen's  $d = .55$ , 95% CI =  $.32-.79$ ,  $p < .01$ ,  $N=49$  studies). More specifically, individuals with larger scores on depression had significantly larger scores on Critical, Punitive, or Demanding Parent (Cohen's  $d = .68$ , 95% CI =  $.48-.88$ ,  $p < .01$ ,  $N=3$  studies) and Vulnerable Child (Cohen's  $d = .47$ , 95% CI =  $.37-.58$ ,  $p < .05$ ,  $N=3$  studies), and lower scores on Nurturing Parent (Cohen's  $d = .61$ , 95% CI =  $.47-.75$ ,  $p < .01$ ,  $N=3$  studies) and Healthy Adult (Cohen's  $d = .53$ , 95% CI =  $.33-.73$ ,  $p < .01$ ,  $N=3$  studies). Individuals with eating disorders had significantly larger scores on Critical, Punitive, or Demanding Parent (Cohen's  $d = .41$ , 95% CI =  $.20-.52$ ,  $p < .01$ ,  $N=10$  studies); Unadjusted, Vulnerable, Angry, Enraged, Impulsive, or Undisciplined Child (Cohen's  $d = .55$ , 95% CI =  $.41-.69$ ,  $p < .01$ ,  $N=10$  studies); other negative coping styles (Cohen's  $d = .34$ , 95% CI =  $.22-.46$ ,  $p < .01$ ,  $N=6$  studies); and lower scores on Healthy Adult (Cohen's  $d = .53$ , 95% CI =  $.33-.73$ ,  $p < .01$ ,  $N=10$  studies). However, all effect sizes were moderate with average Cohen's  $d$  between  $.30$  and  $.70$ .

The second meta-analysis also showed that in 21 studies the scores on the Schema Mode Inventory, the Tokyo Egogram, and the Adjective Check List were correlated with the severity of physical symptoms such as diabetes, psychosomatic disease, or pain. The more physical symptoms individuals reported, the larger their scores on Critical, Punitive, or Demanding Parent ( $R = .32$ , 95% CI =  $.19-.45$ ,  $p < .05$ ,  $N=8$  studies); on Unadjusted, Vulnerable, Angry, Enraged, Impulsive, or Undisciplined Child ( $R = .29$ , 95% CI =  $.15-.45$ ,  $p < .01$ ,  $N=6$  studies); and on other negative coping styles ( $R = .37$ , 95% CI =  $.17-.58$ ,  $p < .05$ ,  $N=5$  studies); and the lower the scores on Nurturing

Parent ( $R = .17$ , 95% CI = .06–.29,  $p < .05$ ,  $N = 4$  studies) and Free or Happy Child ( $R = .23$ , 95% CI = .09–.36,  $p < .05$ ,  $N = 3$  studies). However, all effect sizes were moderate, with average correlations between .15 and .45. The ego state scores could not differentiate individuals with a diagnosis of a physical disease from those without such a diagnosis.

The third meta-analysis showed that individuals with an Axis I disorder had significantly more negative positions toward themselves (Cohen's  $d = .69$ , 95% CI = .48–.89,  $p < .01$ ,  $N = 4$  studies), more negative positions toward others (Cohen's  $d = .45$ , 95% CI = .27–.63,  $p < .05$ ,  $N = 4$  studies), and less positive positions toward themselves (Cohen's  $d = .52$ , 95% CI = .28–.76,  $p < .05$ ,  $N = 4$  studies). However, the effect sizes were moderate, and the significance levels were relatively small.

## Discussion

Our systematic literature review yielded 56 instruments operationalizing TA concepts. Of these, five had good or fair COSMIN quality. Eleven had poor to fair quality, mainly due to a lack of validation studies and translation into other languages. Forty-one studies had poor COSMIN quality, mainly because they were only developed and validated in a relatively selective sample as part of a doctoral research project without further validation. Thus, the poor quality does not necessarily mean that the underlying TA concepts do not exist but mainly that there is a lack of studies.

Based on the evidence from these instruments, it may be concluded that many people in several countries experience differences between different ego states (Parent, Adult, Child) and different functions within their ego states (Critical Parent, Nurturing Parent, Free Child, Adapted Child, and possibly more states). People also have four different fundamental positions in life combining positive/negative positions toward the self and positive/negative positions toward others. The meta-analyses suggest that psychopathology and the severity of physical complaints are associated with strong Critical Parent, strong Adapted Child, weak Healthy Adult, negative coping styles, and negative positions toward self and others. These findings seem to empirically validate some of the key practices in TA psychotherapy.

Our study is limited by including only studies with at least an English abstract and where the full text article was available and could be translated into English. Most of the studies had poor quality, which was mainly due to a lack of studies but also because of different research standards when the older studies were developed in the 1960s and 1970s. Despite these limitations, we recommend that researchers into the effectiveness of TA treatment include any of the instruments with large quality: Schema Mode Inventory, Tokyo University Egogram, the Adjective Check List, and the Life Position Scale. However, most of these questionnaires still need to be translated and validated in more languages and with more samples.

These findings may motivate psychotherapists to use the instruments with large quality in their clinical practice to identify clients' main problems and their root causes. However, questionnaires in clinical practice could also be used more fluidly. Where they are used as sources of feedback and engagement with therapy, they strengthen the working alliance and prevent poor outcomes (Lambert et al., 2018). Transactional analysis

has always placed particular value on sharing information with clients and treating them as equal partners in the therapeutic endeavor. Questionnaires can support that process and offer an additional source of client-generated information and feedback.

## Disclosure statement

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The authors are grateful for the grant from the European Association for Transactional Analysis (EATA) that enabled this research project.

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(NB: See references for the Schema Model Inventory and the Tokyo Egogram, the reference lists for the specific questionnaires, and additional tables and figures for this article in the repository of the Metanoia Institute in London at <http://mirep.metanoia.ac.uk/>)

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