Test Review

Emotional Processing Scale

Overview

Test Review of Emotional Processing Scale

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PART 1 - DESCRIPTION OF THE INSTRUMENT

General Description

The EPS is a 25 item self-report questionnaire designed to measure 5 facets/factors of Emotional Processing – a long established concept in clinical psychology but formalised by a variety of different models. At its heart are unprocessed fears which, when activated, lead to a failure to `process the accompanying emotions in a healthy or helpful way.   The concept is used in many therapeutic interventions which have influenced the development of the EPS model and the questionnaire has been used with a variety of conditions such as addictions, chronic pain, eating disorders, youth offenders and general psychological difficulties. The EPS also provides data on how healthy groups of different nationalities appear to process emotions. The test is intended for use primarily in a clinical context but also in work, research and general settings.

The original version of questionnaire suggested an 8-factor model. Further trialling led to a 5-factor model that could be adequately measured with 25 items. The scales measured by the current version of the EPS are:

1. Suppression – failing to acknowledge and express emotions; inability to talk about them; bottling them up
2. Unprocessed – the intrusion of unwanted emotions; negative emotions recur and can become overwhelming
3. Controllability – overreacting to events; finding it hard to control anger and inappropriate behaviour
4. Avoidance – failing to deal with negative emotions; denying or avoiding them; only focussing on more pleasant things
5. Experience – an emotional dullness; an inability to experience emotions or to understand and name them

The EPS is currently administered as a paper & pencil test with online assessment currently under development. It has been designed to allow supervised as well as remote (unsupervised administration with controlled access) use. Test completion takes approximately 5-10 minutes with manual scoring, producing a profile chart based on pre-printed norms. A large compendium of alternative norms is also available.

Many reliability and validity studies have been carried out in the course of development of the instrument over the last 10 years. The test was designed in the UK and has been translated into 13 languages.

Test Name:
Emotional Processing Scale

Date of current review:
November 2016

Date of previous review:
n/a

Original test name:
n/a

Authors of the original test:
R Baker, P Thomas, S Thomas, M Santonastaso, E Corrigan

Authors of the local adaptation:
n/a

Local test distributor/publisher:
Hogrefe Ltd

Publisher of the original version of the test:
n/a

Date of publication of current revision/edition:
n/a

Date of publication of adaptation for local use:
n/a

Date of publication of original test:
2015

ISBN: 9781854336521

General description of the instrument

Classification

Content domains:
- Disorder and pathology
- Other: Affective style

Intended or main area(s) of use:
- Clinical
- General health, life and well-being
- Work and Occupational
- Research

Description of the populations for which the test is intended:
- Normal healthy adults
- Adults with psychological of physical disorder

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Number of scales and brief description of the variables measured by the instrument

There are five scales labelled as follows:

1. Suppression – failing to acknowledge and express emotions; inability to talk about them; bottling them up
2. Unprocessed – the intrusion of unwanted emotions; negative emotions recur and can become overwhelming
3. Controllability – overreacting to events; finding it hard to control anger and inappropriate behaviour
4. Avoidance – failing to deal with negative emotions; denying or avoiding them; only focussing on more pleasant things
5. Experience – an emotional dullness; an inability to experience emotions or to understand and name them

Response mode:

- Paper & pencil

Demands on the test taker:

Manual capabilities

- information missing

Handedness

- Irrelevant / not necessary

Vision

- information missing

Hearing

- information missing

Command of test language

- information missing

Reading

- information missing

Writing

- information missing

Items format

- Likert scale ratings Number of alternatives: 9

Ipsativity

- Not relevant

Total number of test items and number of items per scale or subtest:
- 25 items in total, 5 per scale

Intended mode of use:
- Controlled mode: No direct human supervision of the assessment session is involved but the test is made available only to known test-takers. Internet tests will require test-takers to obtain a logon username and password. These often are designed to operate on a one-time-only basis.

Administration mode(s):
- Interactive individual administration
- Supervised group administration
- Unsupervised (paper and pencil)

Time required for administering the instrument

Preparation: 0 min

Administration: 5-10 min

Scoring: 5 min max.

Analysis: 2 min max.

Feedback: 5-10 min (estimated)

Indicate whether different forms of the instrument are available and which form(s) is (are) subject of this review:

Fixed 25-item single-use questionnaire and answer sheet booklet.

An online version has also been made available since the current review was completed, (the content of the online version has not been included within this review).

Measurement and scoring

Scoring procedure for the test:
Simple manual scoring key – clerical skills only required.

Scores:
Raw to percentile/T-score conversion using a profile chart, based on a chosen norm group. Scores are averaged: one or two missing values can be tolerated per sub-scale; If 14 or fewer items have been completed across the scale, the Total Emotional Processing Score is invalid. Raw scores are derived using a score sheet (simple instructions contained on score sheet). Band descriptors (e.g., Average, High average, Very High) are included.

Scales used:
Percentile Based Scores
- Centiles
- Deciles

Standard Scores
- T-scores
- Percentile-based bands: 7 bands are defined (e.g. Very high, 95th percentile; High average 75th, 80th, 85th percentile)

Critical scores, expectancy tables or other specific decision oriented indices

Raw score use only

Score transformation for standard scores:
Normalised – standard scores obtained by use of normalisation look-up table

1. Computer- Generated Reports
Are computer generated reports available with the instrument?
Yes (although it was not possible to consider these within this review)

Supply Conditions and Costs
Documentation provided by the distributor as part of the test package:
- User Manual
- Technical (psychometric) manual
- Supplementary technical information and updates (e.g. local norms, local validation studies etc.)

Methods of publication:
Paper

Start – up costs:
Start-up costs:
EPS Kit (Manual, Norms Booklet, Booklets x25)
£137.00 - includes 25 administrations

Recurrent costs:
EPS Booklets/Scoring Forms (25 pack): £53.00. Cost per person is 53/25 = £2.12

Prices for reports generated by user installed software:
n/a

Prices for reports generated by postal/fax bureau service:
n/a

Prices for reports by internet service:
Since the completion of this review, the EPS has also been made available via Hogrefe's online test system (HTS 5).

If users subscribe to the HTS 5 system, then the costs are as follows
Under 10 administrations - £7.50 each
10-49 administrations - £6.50 each

50-99 administrations - £5 each
100+ administrations - £4 each

Without a HTS 5 subscription, the cost per EPS administration is £25 (plus additional administration costs).

Prices for other bureau services: correcting or developing automatic reports:
n/a

Test – related qualifications required by the supplier of the test:
Accreditation in general personality and assessment: measures of typical behaviour, attitudes and preferences (equivalent to EFPA Level 2)
Other:
Hogrefe's clinical 'Level 2':
- Certified training and experience in a relevant discipline.
- Membership of a professional organisation appropriate to the focus of the test. (e.g. HCPC)
- Evidence of competence in the use of psychological tests.

Professional qualifications required for use of the instrument:

- Practitioner psychologist with qualification in the relevant area of application
- Practitioner psychologist
- Research psychologist
- Practitioner in relevant related professions (therapy, medicine, counselling, education, human resources etc.). Specify: (unspecified)
- EFPA Test User Qualification Level 2 or national equivalent

PART 2 - EVALUATION OF THE INSTRUMENT
Key to symbols:

[n/a]	This attribute is not applicable to this instrument
0	Not possible to rate as no, or insufficient information is provided
★	Inadequate
★★	Adequate
★★★	Good
★★★★	Excellent

Quality of the explanation of the rationale, the presentation and the information provided
Quality of the explanation of the rationale
Overall rating of the quality of the explanation of the rationale   ★★★★

Theoretical foundation of the constructs	★★★★
Test development (and/or translation or adaption) procedure	★★★★
Thoroughness of the item analyses and item analysis model	★★★★
Presentation of content validity	★★★★
Summary of relevant research	★★★★

Adequacy of documentation available to the user (user and technical manuals, norm supplements, etc.)
Overall adequacy of documentation available to the user (user and technical manuals, norm supplements, etc.)   ★★★★

Rationale	★★★★
Development	★★★
Development of the test through translation/adaption	N/a
Standardisation	★★★★
Norms	★★★★
Reliability	★★★
Construct validity	★★★
Criterion validity	★★★
Computer generated reports	n/a

Quality of the procedural instructions provided for the user
Overall adequacy   ★★★★

For test administration	★★★★
For test scoring	★★★
For norming	★★★★
For interpretation and reporting	★★★★
For providing feedback and debriefing test takers and others	★★★
For providing good practice issues on fairness and bias	0
Restrictions on use	★★★★
Software and technical support	n/a
References and supporting material	★★★★
Quality of the procedural instructions provided for the user	★★★★

Reviewers' comments on the documentation

The Emotional Processing Scale is an innovative measure that has a strong academic pedigree and is easy to use. Its theoretical foundations, the relevant research studies, and the relationship of the subscales to the authors' theoretical model, are very clearly introduced, though a summary of how the EPS improves, extends or integrates the various earlier models would be helpful. The scale development is well described, but lacks detail of the rationale for the changes that were made. Interpretation and feedback of scales is straightforward, and facilitated by the inclusion of two open-ended questions about the strongest positive and negative emotions experienced during the past week after the 25 scale items. However the naming of the 'Controllability of emotion' sub-scale is somewhat unfortunate as a high score reflects 'lack of control': 'Uncontrollability' or even 'Anger' may be a better label.

The EPS is well documented through the manual and norm booklet. Journal articles relating to the measure are also available from the publisher on request. The manual includes a very clear account of the psychometric properties of the EPS, with chapters on norms, reliability and validity studies. The pre-printed norm group is based on a 'healthy' group of 1022 (student and community) participants. It appears that this sample was recruited in a number of ways and may be quite heterogeneous; however an impressive number of comparison groups are reasonably well described. Reliability information includes internal consistencies, which are high, and a small amount of test-retest data, which perhaps need a fuller discussion. Evidence of construct validity is presented both from factor analytic and correlational studies. However, a weakness is that the latter are not presented with a priori hypotheses. Evidence is also presented that the EPS can differentiate between different groups. However, the manual makes clear that to make such predictions more research is needed.

An issue that would benefit from more extensive discussion is the interpretation of extreme scores. There is some discussion of the potential for low scores to reflect less-than-honest reporting. However, there is limited, specific discussion of the assumption that higher scores are unhealthy, which clinically might not always be the case. (For example, suppression or avoidance of emotionally painful material could in some circumstances be seen as appropriate and adaptive.)

The questionnaire is self-administered, with straightforward instructions for the test taker. Gender, age and educational achievement group differences are reported, but there are no data for British ethnic groups, and the manual does not address use with disabled respondents. These omissions are acknowledged, although the publisher states that they can provide specific norms for Indian, Egyptian and Japanese respondents.

2. <u>Quality of the test materials</u>
Quality of the test materials paper-and-pencil tests

General quality of test materials (test booklets, answer sheets, test objects etc.)	★★★★
Ease with which the test taker can understand the task	★★★★
Clarity and comprehensiveness of the instruction (including sample items and practice trials) for the test taker	★★★★
Ease with which responses or answers can be made by the test taker	★★★★
Quality of the formulation of the items and clarity of graphical content in the case of non-verbal items.	★★★★
Quality of the materials of paper-and-pencil tests	★★★★

Reviewers' comments on quality of the materials

The test materials are appealing and easy to use, and the process of completing the test is very clear and simple. The questionnaire booklet and answer sheet are professionally printed and the Manual and Norm Booklet are well laid out. It is possible that some people in the healthy group may find the items a little trivial if they do not identify with the difficulties the items represent. Like all questionnaires of this kind, the EPS does rely to some extent on the test taker responding openly and honestly.

<u>Norms</u>

Is the test norm referenced? Yes

Norm referenced interpretation
Overall Adequacy: ★★★★

Appropriateness for local use	★★★★
Appropriateness for intended applications	★★★★
Sample sizes (classical norming)	★★★★
Sample sizes continuous norming	N/a
Procedures used in sample selection	
Representativeness of the norm sample(s)	Non-probability sample: convenience and purposive
Quality of information provided about minority/protected group differences, effects of age, gender etc.	★★★
How old are the normative studies?	★★★★
Practice effects	n/a

Is the test criterion referenced? No

Reviewers' comments on the norms

There is a good range of norm groups, based on data collected by practitioners. Most groups have good sample sizes (varying between 76 and >1000). The distributions are presented as histograms showing that the scales provide a good spread of scores across the raw score range.

The intended applications are for people presenting certain kinds of problems to a counsellor/therapist and the norms are sufficiently well described for the professional involved to choose and make reasonable comparisons. A large norm group of healthy individuals forms the basis of the pre-printed profile chart and could be widely applied even with a clinical population to illustrate differences from the general population.

Many norm groups are described in the norm booklet, which provides tables to transform raw scores into T-scores so that differences can be properly quantified. A summary table (Table 15) presents comparative norms across mental health diagnoses and nationalities. Each norm table is also presented separately for men and women. However, there is no discussion of these group differences, and no information regarding other minority/protected groups. Some group data are presented elsewhere (but without corresponding norm tables) for age and educational achievement groups.

The scoring is based on the 0 -9 ratings of the 25 EPS items and involves calculation of an average for each scale. A minor criticism is that the pre-printed profile chart only lists a midpoint value to one decimal (e.g. 4.0) leaving the user unsure where to place a value that differs from the pre-printed ones. Use of bands e.g. 3.8-4.2 could remedy this. Also, the summary table includes only the 5th, 25th, 50th 75th and 95th percentiles rather than the more finely graded data used in the profile chart.

Reliability

Overall Adequacy: ★★★★

Overall Adequacy	
Data provided about reliability	➤ Reliability coefficients of measurement for a number of different groups (for each scale or subscale)
Internal consistency: ★★★★	
Sample size	➤ Good range of adequate to large studies
Kind of coefficients reported (select as many as applicable)	➤ Coefficient alpha or KR-20 Other, describe: split half
Size of coefficients	Excellent (e.g. $r \geq 0.90$) ★★★★
Reliability coefficients are reported with samples which, match the intended test takers.	

Test retest reliability-temporal stability:	
	One inadequate study (e.g. sample size less than 100)
Size of coefficients	Excellent (e.g. $r \geq 0.80$)
Data provided about test-re-test interval	4-6 weeks
Reliability coefficients are reported with samples which match the intended test takers.	

Equivalence reliability:	
Sample size	Not applicable
Are the assumptions for parallelism met for the different versions of the test for which equivalence reliability is investigated?	Not applicable
Size of coefficients	Not applicable
Reliability coefficients are reported with samples which……….	Not applicable

IRT based method:	
Sample size	Not applicable
Kind of coefficients reported (select as many as applicable)	Not applicable
Size of coefficients (based on the final test length)	Not applicable

Inter-rater reliability:	
Sample size	Not applicable
Kind of coefficients reported (select as many as applicable)	Not applicable
Size of coefficients	Not applicable

Other methods of reliability estimation:	
Sample size	Not applicable
Results	Not applicable

Reviewers' comments on reliability

The EPS shows excellent internal consistency, based on several large samples, with reliabilities in excess of .90 for the Total score and around .80 for the sub-scales. The tool benefits from the information-rich 9-point rating scale which offers a high degree of granularity. The constructs are measured with a high degree of accuracy and sufficient sensitivity to the situation.

The EPS has been designed for repeat measurement and explicitly asks for responses in the light of the emotional processing in the week before administration. Test-retest reliability is reported for a very small UK sample, and a slightly larger Italian sample, with adequate values of .74 for the Total and from around .60 for the sub-scales.

While more test-retest data would be desirable, the EPS is primarily a state questionnaire (mind-set is 'last week'); therefore, the concept of sensitivity to intervention may be more useful. Thus the test-retest results should not be used to infer accuracy but rather to monitor change under many conditions: more studies would be useful to help understand emotional processing - and the value of this instrument.

Validity

Overall Adequacy: ★★★

Construct validity:	
Design used	- Exploratory Factor Analysis - Difference between groups - Correlations with other instruments and performance criteria
Do the results of (exploratory or confirmatory) factor analysis support the structure of the test?	★★★★
Do the items correlate sufficiently well with the (sub) test score?	★★★★
Is the factor structure invariant across groups and/or is the test free of item-bias (DIF)?	★★★★
Are the differences in mean scores between relevant groups as expected?	★★★★
Median and range of the correlations between the test and tests measuring similar constructs	★★
Do the correlations with other instruments show good discriminant validity with respect to constructs and the test is not supposed to measure?	★★
If a Multi-Trait-Method design is used, do the results support the construct validity of the test (does it really measure what it is supposed to measure and not something else)?	N/a

Other, e.g. IRT-methodology, (quasi-) experimental designs (describe):	N/a
Sample sizes	★★★★
Quality of instruments as criteria or markers	★★★
How are old are validity studies?	Up to 9 years
Construct validity – Overall adequacy	★★★
Criterion – related validity:	
Type of criterion study or studies (select as many as applicable)	• Predictive • Concurrent
Sample sizes	★★★★
Quality of criterion measures	★★★★
Strength of the relation between test and criteria	★★★
Criterion – related validity – overall adequacy	★★★
How old are the validity studies	Up to 9 years

Reviewers' comments on validity

An impressive amount of EPS validity research has been documented through three articles and the manual. The factor structure holds up well with few cross-loadings. Construct correlations with relevant marker scales converge well where expected and some data show appropriate divergence for less related constructs. The authors claim that the EPS demonstrates factorial similarity/robustness in different samples but these data are not presented.

The manual reports significant correlations with other measures - and these may be valuable evidence of the validity of the EPS. However, what is missing is a rationale for why these other tools are good measures for the purpose of validating the EPS, and a priori hypotheses of how the different EPS scales should correlate with the various measures. (At one level, the results could simply be demonstrating an over-riding anxiety factor affecting all the scales in all of the measures used. It could be informative to increase the range of instruments used, to include, for example, a big 5 personality measure and PTSD-specific measures.) Three correlational studies are reported, one based on extraction of relevant data from a study using the 8-factor earlier version of the EPS, while the other two are unpublished.

A very large study, impressive at scale and item levels, reports differentiation between "psychological", pain and healthy groups. Another study reports differences between English, Polish, Hindi and Portuguese participants. However, interpretation of national differences is difficult, as the proportion of "psychological", pain and healthy participants may vary between groups: an analysis limited to "healthy" participants would be more informative.

Other studies report improvement in EPS scores following CBT and other therapeutic interventions, and use of EPS scores to predict post-natal depression and to identify "caseness" for PTSD.

Final Evaluation

Evaluative report of the test:

The Emotional Processing Scale (EPS) is an innovative yet robust measure of affect and well-being. Its development has been documented through several journal articles, a comprehensive manual and a voluminous norm supplement. The practical implementation as a test booklet with integrated answer sheet and profile chart is laudable especially with view to transparency and clarity for handling missing data. The EPS is based on a model that is simple and easy to understand. The five scales have a clear relationship to the underlying theoretical model. (However, the Controllability scale is mis-named as the items measure lack of control. A label such as "Anger" may be more appropriate.) The measurement is based on quite transparent items that require a person to self-reflect, and to have a level of self-awareness and a willingness to be honest. The inclusion after the 25 multiple-choice items of two open-ended questions about the individual's strongest positive and negative emotions in the past week facilitates interpretation and feedback. The manual could be used as a model for others to emulate.

There is a great deal of data which has been extensively analysed, to a level that is commendable. Much of the data are published internally, and the manual does not give sufficient information for the analyses to be properly evaluated but the information that is presented appears to be of good quality and supportive of the claims made for the instrument.

Reliability of scales is excellent, benefiting from the information-rich 9-point rating scale. Validity studies show a sound internal structure, good convergence with relevant existing scales and some evidence of divergence where appropriate. A large norm group based on healthy UK participants is provided as the pre-normed profile chart, and many norm groups are presented as T-scores in the norm booklet. The EPS has proven value in many clinical settings with the promise of useful of application in general, research and work settings.

Supply of the EPS is limited to suitably qualified practitioners. Self-completion of the tool is highly recommended to sense the dynamic created when responding with the previous week firmly in mind.

While not included in this review, it is worth mentioning that a version of the EPS has been developed for 13- to 18-year-olds, which has been used in research that compares emotional processing and other emotional dimensions in the early, mid and late teenage years to understand more about the developing capacity of teenagers to cope with emotional events. This work is very welcome given the rise in self-harm and suicides in this age group. Studies comparing the EPS with physical or biological measures are under way, as are further translations and the development of an online version.

Conclusions:
The EPS is spearheading a revolution in thinking to overcome the limitations imposed by the 'medical model', to which emotional processing offers an alternative approach. The manual provides a comprehensive attempt to explain and justify the development of the instrument and its suitability for use by appropriately trained clinicians. Problematic styles of emotional processing are implicated in nearly every type of clinical condition, from psychological disorders, to medical conditions without organic pathology, to purely medical conditions. Cognition and emotion are inextricably intertwined and mutually interacting. The development of an emotional processing scale makes it possible to explore more fully the contributory role of key emotional factors in psychopathology and psychological therapy.

Recommendations:
Suitable for use in the area(s) of application defined by the distributor, by test users who meet the distributor's specific qualification requirements (at least EFPA User Qualification Level 2)