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THE CONVERGENCE OF ALEXITHYMIA MEASURES

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The construct of alexithymia is most frequently measured by means of the 20-item Toronto Alexithymia Scale (TAS-20). However a number of other instruments have been developed to compensate for problems with measuring alexithymia through self-report measures. Convergence between the different alexithymia measures is rarely studied. This study investigates the convergence among the TAS-20, the Observer Alexithymia Scale (OAS), the Toronto Structured Interview for Alexithymia (TSIA), the modified Beth Israel Hospital Psychosomatic Questionnaire (M-BIQ), and the alexithymia dimensions as judged by the treating psychologist in an inpatient sample (N = 80). Correlations between the total scores were all significant. However exploratory factor analyses of these measures and their subscales indicate that they do not tap into one underlying factor. It is concluded that the TSIA and the M-BIQ are the best indicators of alexithymia, yet a multi-method approach and care in interpreting results are warranted.

Introduction

The concept of alexithymia was proposed in the seventies by Sifneos (1973) based on clinical observations of the psychic functioning in psychosomatic patients (Nemiah & Sifneos, 1970). It consists of four defining dimensions: (1) difficulty identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal, (2) difficulty describing feelings to other people, (3) constricted imaginal processes, and (4) a stimulus-bound, externally orientated cognitive style. Since its inception, alexithymia has become a topic of intensive empirical research. Nowadays alexithymia is considered as a transnosographic clinical dimension (Corcos & Speranza, 2003; Taylor, Bagby, & Parker, 1997) and it is studied in relation to a wide variety of disorders including addiction (e.g., Loas, Otmani, Lecercle, & Jouvent, 2000), posttraumatic stress disorder (e.g., Frewen, Lanius, Dozois, Neufeld, Pain, Hopper et al., 2008), and mood and anxiety disorders (e.g., Hendryx, Haviland, & Shaw, 1991).

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While numerous instruments have been developed to asses alexithymia over the last 30 years, most of the earlier instruments are no longer used due to psychometric problems. Nowadays the most widely used instrument in alexithymia research is the self-report 20-item Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994; Bagby, Taylor, & Parker, 1994). The psychometric properties of this scale (reliability and factorial validity) have been investigated extensively and are considered adequate (Taylor, Bagby, & Parker, 2003; see also Meganck, Vanheule, & Desmet, 2008). However, the TAS-20 has been criticised due to the inherent difficulty in asking someone to judge a process s/he may not be capable of (Lane, Ahern, Schwartz, & Kaszniak, 1997; Waller & Scheidt, 2004); the sensitivity of the TAS-20 for negative affectivity (Lumley, 2000); and the absence of items reflecting the reduced fantasy dimension of alexithymia. These problems might compromise the construct validity of the TAS-20 and consequently alternative measures of alexithymia have been developed, like the Observer Alexithymia Scale (OAS; Haviland, Warren, & Riggs, 2000) and the Toronto Structured Interview for Alexithymia (TSIA; Bagby, Taylor, Parker, & Dickens, 2006). Together with the modified version of the Beth Israel Hospital Psychosomatic Questionnaire (M-BIQ; Bagby, Taylor et al., 1994), these non-self report measures are often mentioned as good alternatives for the TAS-20 (e.g., Bagby et al., 2006; Taylor & Bagby, 2004; Vanheule, 2008).

While the authors of the TAS-20 (Bagby, Parker et al., 1994) recommend using a multi-method approach as a way to enhance the quality of alexithymia research (Taylor & Bagby, 2004; Taylor et al., 1997), few studies adhere to this method. Moreover, hardly any studies investigate the convergent validity of existing alexithymia measures. Convergence between these measures is however a premise for interpreting research results on relationships between alexithymia and other variables. The few studies exploring the convergence among alexithymia measures do not provide consistent evidence of their convergent validity. Sometimes correlations with large effect sizes ($r \approx .50$) are found (Bagby, Taylor et al., 1994; Haviland, Warren, Riggs, & Nitch, 2002), yet more often correlations are in the small ($r \approx .10$) to medium ($r \approx .30$) effect size range with sometimes even negative correlations between subscales of different instruments (Berthoz, Haviland, Riggs, Perdereau, & Bungener, 2005; Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005).

To our knowledge, only Lumley and colleagues (2005) investigated more than two alexithymia measures simultaneously, and hardly any studies investigate convergent validity of alexithymia measures in clinical populations. Given the relevance of the alexithymia construct in these populations, we will investigate the convergent validity of five alexithymia measures in an inpatient sample. In this study four existing measures were investigated, namely the TAS-20, the TSIA, the OAS, and the M-BIQ. Furthermore, we asked

treating clinicians to judge their patients on the four defining dimensions of alexithymia (cf. *supra*). We will not only investigate correlation patterns, yet also explore whether the different alexithymia operationalizations tap into one underlying construct or not. If the construct validity of the different measures is good, we would expect one underlying factor. However, the limited associations found between measures in former research indicate the possibility of more underlying factors. Without posing explicit hypotheses, we see two possible influences if more than one factor would appear to be underlying the measures: the method or rater and the differing conceptual background of the instruments. First, the fact that different instruments are rated by different people (the patient, the researcher or the therapist) might result in smaller relations between instruments. Second, the TAS-20, the TSIA and the M-BIQ are conceptually based on the original definition of alexithymia as discussed by Sifneos (1973) and Taylor and colleagues (1997), while the OAS is based on a broader description of the typical alexithymic personality (Haviland & Reise, 1996). These conceptual differences might also cause different measures to refer to different aspects of alexithymia.

Method

Sample

The sample consisted of 80 patients (63.8% female) from psychiatric hospitals in Belgium. The mean age was 39.66 years (SD = 12.19). In terms of education, 7.5% attended elementary school only, 15% completed a first cycle (3 years) in high school, 61.25% completed a second cycle (6 years) in high school, 12.5% obtained a non-academic degree in higher education, and 3.75% received an academic degree in higher education. All participants met DSM-IV axis I criteria for the following diagnoses; mood disorders (70%), anxiety disorders (17.5%), schizo-affective disorders (5%), somatoform disorders (2.5%), adjustment disorder (2.5%), alcohol dependence (1.25%), and eating disorders (1.25%). On axis II, 36.25% of the participants met criteria of one or two (11.2%) personality disorders. For 17.5% of the participants diagnosis was deferred and 46.25% did not receive any diagnosis. Diagnosed personality disorders included personality disorder not otherwise specified (15%), avoidant personality disorder (12.5%), obsessive-compulsive personality disorder (7.5%), borderline personality disorder (6.25%), dependent personality disorder (3.75%), schizotypal personality disorder (1.25%), and paranoid personality disorder (1.25%).

Measures

The 20-item Toronto alexithymia scale

The 20-item Toronto Alexithymia Scale (TAS-20; Bagby, Parker et al., 1994) is a self-report measure for alexithymia with each item rated on a five-point Likert scale. Total scores range from 20 to 100, with higher scores indicating higher alexithymia. The instrument includes three subscales: difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). The Dutch translation of the TAS-20 was obtained by means of a translation and back-translation procedure and the final version was established in consultation with R.M. Bagby, one of the original authors of the instrument (Kooiman, Spinhoven, & Trijsburg, 2002). Psychometric qualities of the Dutch version of the TAS-20 were studied in a large clinical and non-clinical sample and can be considered adequate (Meganck et al., 2008).

The Toronto structured interview for alexithymia

The Toronto Structured Interview for Alexithymia (TSIA; Bagby et al., 2006) consists of 24 questions tapping into the four core dimensions of alexithymia: difficulty identifying feelings (DIF), difficulty describing feelings (DDF), externally oriented thinking (EOT), and limited imaginal processes (IMP). Items are scored by the interviewer on a three-point Likert scale. Total scores range between 0 and 48 and higher scores indicate greater alexithymia. Factorial validity was established in a combined community and clinical sample and internal consistency and inter-rater reliability are good (Bagby et al., 2006). The Dutch translation of the TSIA was obtained by the same procedure as for the TAS-20 (F. De Fruyt, personal communication).

The observer alexithymia scale

The Observer Alexithymia Scale (OAS; Haviland et al., 2000) consists of 33 items and is rated on a four-point Likert scale. The total score ranges from 0 to 99 and higher scores again indicate greater alexithymia. Five subscale scores are computed (Distant, Uninsightful, Somatizing, Humourless, and Rigid). To translate the English version of the OAS into Dutch our research team followed the same procedure as was used for the TAS-20 and the TSIA.

The modified Beth Israel hospital psychosomatic questionnaire

The modified Beth Israel Hospital Psychosomatic Questionnaire (M-BIQ, Bagby, Taylor et al., 1994) consists of 12 items that are scored on a seven-point Likert scale. Total scores range from 12 to 84 and higher scores indicate higher alexithymia. Two subscale scores are computed (six items each): affect awareness (AA) and operatory thinking (OT). For the translation of the

English M-BIQ into Dutch again the same procedure was followed as for the other instruments.

Procedure

Participants were recruited at intake wards of six psychiatric hospitals in the Dutch-speaking part of Belgium. Manifestly psychotic patients or patients primarily hospitalised for substance dependence were excluded. Possible participants received oral and written information on the study from their psychologist during the first week of their stay. If willing to participate, they signed informed consent and were interviewed three times by a clinically trained researcher (master or doctor level clinical psychologist). First the TSIA was administered (interviewers were trained using the manual and test interviews); second, the interviewer rated the M-BIQ based on a clinical diagnostic interview (CDI; Westen, 2006), with explicit questions on affective experience, dreams, and so on, and finally, the SCID-I and SCID-II were administered to obtain axis I and II diagnoses (interviewers were formally trained to administer and score these interviews). Participants filled out the TAS-20. Treating psychologists filled out the OAS and judged descriptions of the four alexithymia dimensions. To do this they received a form with the definition of the four core alexithymia dimensions as described in the introduction and were asked to rate these on a seven-point Likert scale (see Appendix 1). From this we obtained a total alexithymia score ($\alpha = .75$) and four dimension scores (difficulty identifying feelings; difficulty describing feelings; limited fantasising capacity; externally oriented thinking). The psychologists that participated in this study were all master level clinical psychologists with more than five years of clinical experience and psychodynamic or cognitive-behavioural theoretical background. The study was approved by the ethics review board of the Faculty of Psychology and Educational Sciences (Ghent University).

Statistical analyses

Pearson's correlation coefficients were used to examine relationships between the five alexithymia instruments. Cronbach's alpha was used to investigate internal consistency of the total and subscale scores in this sample. To explore the underlying structure of the alexithymia measures, exploratory factor analyses (EFA) on the total and subscale scores were performed using principal axis factoring. We wanted to explore the major sources of variation in these five measures and therefore relied on the mineigen criterion and the scree plot to decide on the number of factors to be retained. However, for both the total scores and the subscales we also ran a model where only one factor was extracted. If more than one factor would arise, we could expect them to

be correlated and consequently oblique rotations were performed. No analyses at item level were conducted because of the small sample size.

Results

Descriptive statistics

Mean scores, standard deviations, score ranges and internal consistency of the alexithymia measures (total and subscale scores) are presented in Table 1. Mean alexithymia scores were comparable to other studies using clinical samples with the TSIA (Bagby et al., 2006) and the M-BIQ (Haviland et al., 2002), and slightly higher for the TAS-20 (Taylor et al., 2003) and the OAS (Haviland, Warren, Riggs, & Gallacher, 2001). Internal consistency was good for all total scores and most subscales. However for the TSIA IMP subscale Cronbach's alpha was slightly too low and for the EOT subscale of the TAS-20 and the rigid subscale of the OAS internal consistency indices indicated poor reliability.

Table 1
Descriptive Statistics[1]

		Mean	SD	Range	α
TAS-20	DIF	22.71	6.33	8-34	.79
	DDF	17.37	4.61	5-23	.73
	EOT	20.06	4.46	8-29	.42
	Total	60.15	11.35	34-84	.77
TSIA	DIF	4.10	3.18	0-12	.81
	DDF	5.56	3.32	0-12	.81
	EOT	5.42	3.36	0-12	.80
	IMP	5.93	2.63	1-12	.60
	Total	21.01	9.54	3-46	.88
BIQ	AA	21.37	7.29	10-38	.85
	OT	21.52	7.18	8-36	.71
	Total	42.88	12.90	23-71	.85
OAS	Distant	15.43	4.59	3-24	.78
	Uninsightful	14.43	3.58	5-21	.62
	Somatizing	7.81	4.33	1-15	.88
	Humor	7.26	3.07	0-15	.80
	Rigid	6.33	2.47	1-11	.43
	Total	51.29	11.42	28-75	.83
Alexithymia		15.24	4.62	7-24	.75

1 *Note*: $N = 80$ for TAS-20, TSIA, OAS, and Alexithymia; $n = 60$ for M-BIQ. TAS-20: 20-item Toronto Alexithymia Scale; TSIA: Toronto Structured Interview for Alexithymia; OAS: Observer Alexithymia Scale; M-BIQ: modified Beth Israel Hospital Psychosomatic Questionnaire; Alexithymia: psychologist rated alexithymia; DIF: difficulty identifying feelings; DDF: difficulty describing feelings; IMP: impaired imaginal processes; EOT: externally oriented thinking; AA: affect awareness; OT: operative thinking. * $p < .05$; ** $p < .01$

Correlations among alexithymia measures

The zero order correlations between the TAS-20, the TSIA, the OAS, the M-BIQ, and the psychologist rated alexithymia are presented in Table 2. Correlations between total scores of the five alexithymia measures were all significant, yet differed in magnitude. The highest correlations can be observed between on the one hand the TSIA and the M-BIQ (r = .76) and on the other hand the OAS and psychologist rated alexithymia (r = .59). The other correlations between the total scores of the five alexithymia instruments (range: .28-.48) were in the medium to large effect size range (Cohen, 1988).

Table 2
Correlations among the five alexithymia measurements[1]

	TAS-20	TSIA	OAS	BIQ
TSIA	.47**			
OAS	.28*	.37**		
BIQ	.48**	.76**	.36**	
Alexithymia	.31**	.45**	.59**	.36**

1 *Note*: N = 80 for TAS-20, TSIA, OAS, and Alexithymia; n = 60 for M-BIQ. TAS-20: 20-item Toronto Alexithymia Scale; TSIA: Toronto Structured Interview for Alexithymia; OAS: Observer Alexithymia Scale; M-BIQ: modified Beth Israel Hospital Psychosomatic Questionnaire; Alexithymia: psychologist rated alexithymia. * $p < .05$; ** $p < .01$

Exploratory factor analyses

To investigate whether the different alexithymia measures tap into one underlying dimension, we first ran an EFA on the total scores of the five alexithymia measures. Both the eigenvalue greater than one criterion and the scree plot indicated a two factor solution as optimal. However, we also present the model with only one factor extracted to see which measures show the highest loadings (see Table 3). These are the TSIA and the M-BIQ. The rotated solution of the two-factor model is presented in Table 3. The TAS-20, the TSIA, and the M-BIQ comprise the first factor whereas the OAS and the psychologist rated alexithymia comprise the second factor. These two factors explain 74.89% of the variance and they correlate .50 with each other. The two underlying factors are clearly substantially related.

To get a more detailed picture of the underlying structure of these instruments, we consequently performed an EFA on their subscales. The one factor solution is presented in Table 4. We see that the subscales of the TSIA, the BIQ and also the psychologist rated alexithymia dimensions load most consistently high. However, a one factor model appears no good solution for the data. The eigenvalue greater than one criterion suggested five factors, while based on the scree plot, two or three factors seemed more appropriate. The five factor structure appeared to be too complex with little subscales per

Table 3

Exploratory factor analysis on the total scores of the five alexithymia measures (TAS-20, TSIA, OAS, M-BIQ, psychologist rated alexithymia): One and two factor solution (principal axis factoring, oblique rotation)[1]

	1-factor model	2-factor model	
	1	1	2
TAS-20 total	.534	.548	.001
TSIA total	.817	.911	-.036
OAS total	.474	-.073	.845
M-BIQ total	.838	.823	.054
Alexithymia total	.552	.114	.656

1 *Note*: TAS-20: 20-item Toronto Alexithymia Scale; TSIA: Toronto Structured Interview for Alexithymia; OAS: Observer Alexithymia Scale; M-BIQ: modified Beth Israel Hospital Psychosomatic Questionnaire; Alexithymia: psychologist rated alexithymia. Factor loadings ≥ .40 were considered significant and are underlined.

factor, some subscales loading lower than .40 on all factors and also some subscales showing substantial loadings on different factors. The two factor solution seemed too sparse since the OAS somatising subscale loaded around zero on both factors and thus this subscale was not at all represented by the factors. The three factor solution seemed to be the best representation and is also provided in Table 4. The subscales of the TAS-20, the TSIA, and the M-BIQ loaded highest on the first factor. However the TAS-20 DIF and the TSIA IMP subscales loaded lower than .40. The second factor consisted of the OAS subscales and the psychologist rated alexithymia dimensions, except for the OAS somatising subscale which formed the third factor. The three factors explain 51.57% of the variance; factor 1 correlated .45 with factor 2, factor 1 correlated .11 with factor 3, and factor 2 correlated .10 with factor 3.

Discussion

This study investigated the convergence among four alexithymia measures and one additional measure consisting of psychologists' ratings of patients on the four core alexithymia dimensions. Not only are different (> 2) alexithymia measures rarely examined together, as far as we know this was never done in a clinical sample.

The intercorrelations between the five instruments were all significant and within the range of correlations found in former studies. Although the present results are supportive of the convergent validity of the investigated instruments, some remarks can be made. First, the very high correlations between the interviewer scored TSIA and M-BIQ on the one hand and the psychologist scored OAS and alexithymia dimensions on the other hand indicate the influence of shared method variance. In other words, the fact that these instruments were filled in by the same person produces artificially inflated correla-

Table 4

Exploratory factor analysis on the subscales of the five alexithymia measures (TAS-20, TSIA, OAS, M-BIQ, psychologist rated alexithymia): One and three factor solution (principal axis factoring, oblique rotation)[1]

	1-factor model	3-factor model		
	1	1	2	3
TAS-20 DIF	.284	.316	-.043	.213
TAS-20 DDF	.497	.532	.037	-.094
TAS-20 EOT	.359	.478	-.071	-.111
TSIA DIF	.519	.570	-.006	.060
TSIA DDF	.756	.883	-.014	-.079
TSIA EOT	.636	.708	.015	-.081
TSIA IMP	.413	.360	.108	-.017
M-BIQ AA	.765	.898	-.053	.120
M-BIQ OT	.613	.608	.060	.094
OAS distant	.516	-.013	.729	-.174
OAS uninsightful	.303	-.139	.491	.357
OAS somatising	-.068	-.064	-.180	.822
OAS humour	.497	.052	.587	-.034
OAS rigid	.362	.075	.325	.264
Alexithymia DIF	.579	.117	.561	.310
Alexithymia DDF	.648	.140	.689	-.065
Alexithymia IMP	.447	-.193	.845	-.090
Alexithymia EOT	.537	.248	.407	-.072

1 *Note*: TAS-20: 20-item Toronto Alexithymia Scale; TSIA: Toronto Structured Interview for Alexithymia; M-BIQ: modified Beth Israel Hospital Psychosomatic Questionnaire; OAS: Observer Alexithymia Scale; Alexithymia: psychologist rated alexithymia; DIF: difficulty identifying feelings; DDF: difficulty describing feelings; IMP: impaired imaginal processes; EOT: externally oriented thinking; AA: affect awareness; OT: operative thinking. Factor loadings ≥ .40 were considered significant and are underlined.

tions. We believe this reflects a very common problem in psychology research (see also Meyer, Finn, Eyde, Kay, Moreland, Dies et al., 2001) as relationships between variables are often studied using the same method (e.g., self-report) to operationalize the different variables. Consequently, the 'real' correlations between these instruments are probably lower. Second, the other correlations ranged from .28 (OAS and TAS-20) to .48 (TAS-20 and M-BIQ). While such values are often considered adequate in psychological research (Meyer et al., 2001), it should be noted that these instruments explain only between 7.8% and 23% in each other's variance. This means that convergence is only partial and needs to be understood in the light of large unique parts of variance.

That care is warranted in considering these instruments as measurements of the same construct was also indicated by the exploratory factor analyses that were conducted on both the total scores and the subscales. Considering

the total scores, we did not find support for just one underlying factor but actually found two factors, with the TAS-20, the TSIA, and the M-BIQ loading on the first factor, and the OAS and the psychologist rated alexithymia loading on the second factor. We bear in mind that these factors may partially reflect the different raters rather than different underlying constructs (see also Lumley, Neely, & Burger, 2007). Still, the raters of the TSIA and the M-BIQ had no information on the TAS-20 scores of the patients. It is also plausible that the interviewers who scored the TSIA and the M-BIQ were more familiar with the theoretical definition of alexithymia compared to the treating psychologists. As was discussed in the introduction, the TAS-20, the TSIA, and the M-BIQ are all instruments developed by one set of authors on the basis of their definition of alexithymia, while the OAS was developed by a different set of authors (see Haviland et al., 2000) and is based on a broader definition of the alexithymia construct. The fact that the psychologist ratings loaded on the same factor than the OAS is probably an artefact of the shared raters for these two instruments. Another possible factor that could have influenced our finding of two factors is the time frame in which these measures were administered. The TSIA and the M-BIQ were rated closely in time to the administration of the TAS-20 while the psychologist rated the OAS and the alexithymia dimensions after approximately six weeks of treatment. So next to coincidences related to the moment of administration, treatment effects cannot be excluded. However, as alexithymia is considered to be relatively stable (Taylor et al., 1997), we expect treatment effects to be negligible.

Similar results were found on subscale level, but some subscales showed to be problematic. First, the TAS-20 DIF subscale loaded highest on the expected factor, however the loading was rather low. It might be that the often mentioned influence of negative affectivity on this subscale (Lumley, 2000; Lumley et al., 2005) provides an explanation for this finding. Also the TSIA IMP subscale shows a lower factor loading on the first factor. This might be because of the rather low internal consistency of the subscale or it could indicate problems in the operationalization of the IMP dimension, or even theoretical problems with the dimensionality of the alexithymia construct. Indeed, such problems with measuring the IMP (or fantasy) dimension reliably, as well as small relationships between this dimension and the other alexithymia dimensions, prompted the authors of the TAS-20 to remove it from the original version of the scale (Taylor, Bagby, & Parker, 1992). The absence of substantially high loadings of the OAS Rigid subscale on any of the factors might be due to the really low internal consistency of this subscale. Finally, the OAS somatising subscale appears to form a separate factor that is completely unrelated to the other two factors. So, while the first two factors indicate that the different measures might not tap into one underlying alexithymia construct, these two factors were still substantially related to each other. Both factors

were however unrelated to the third factor, indicating that something completely different is measured by the OAS somatising subscale. This again shows that the broader conceptualisation of alexithymia on which the OAS is based might incorporate related yet not core aspects of alexithymia and that it is problematic to use these aspects as indicators of alexithymia.

Although a one factor solution was never indicated, we did present results for such a model to see which instruments loaded highest on one assumed alexithymia factor. For the total scores, the TSIA and the M-BIQ loaded highest, while the OAS showed the lowest factor loading. At subscale level, the subscales of the TSIA, the M-BIQ but also the psychologist rated alexithymia dimensions showed the highest loadings. We might carefully conclude that the TSIA and the M-BIQ are the best representatives of alexithymia. Because of the more formalised and less time consuming administration of the TSIA as compared to the M-BIQ, this instrument might be the best option that is currently available to measure alexithymia. We note that also the four dimensions scored by the psychologist seem to provide a reasonable estimation of alexithymia. Even though this scale consisted of only four items, internal consistency was adequate. The administration of these items moreover allowed us to detect the rater influence as a strong method factor influencing the observed relationships between measurements.

Future research should focus on predictive validity of these instruments. If they predict external and theoretically related variables in a consistent way, smaller correlations between them would be no problem. The few studies which use a multi-method approach to measure alexithymia in relation to other variables, however, do not provide promising results. For example, in a pilot study by Meganck, Vanheule, Desmet, and Inslegers (2009) different relationships were found between emotional language use and alexithymia as operationalized by the TAS-20 on the one hand and the TSIA on the other hand.

Limitations of this study include the small sample size, which necessitates care in generalising the results. Even though our sample size is comparable to other studies in clinical populations using extensive measurement, future research should aim to replicate these results in larger samples containing both clinical and nonclinical participants. Second, there are limitations inherent to the design of the study: the time lag between the researcher and therapist ratings, the fact that some instruments were completed by the same person and the lack of control on the familiarity with the alexithymia construct of the therapists. A more standardised research design could solve this partly, however this could reduce ecological validity.

We conclude that expert ratings (researcher, clinician) based on the core alexithymia dimensions are most valuable in examining the construct. This is essential since the measurement of a concept that does not coincide with clin-

ical perception of the phenomenon lacks a frame of reference for interpretation. So, although a golden standard in alexithymia measurement is difficult to assume, instruments like the TSIA and the M-BIQ are probably about as close as we can get. This does not imply that other alexithymia measures have no use. We agree with Lumley et al. (2007) that the best way to proceed in future research is to apply a multi-method approach considering the various measures of alexithymia as partially independent indicators of the construct.

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Appendix 1

Indicate on a scale from 1 to 7 to what extent expressions are applicable to your patient (1= not at all; 4 = moderately; 7 = very much):

		Not at all			moderately			Very much
1	Has difficulty identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal	1	2	3	4	5	6	7
2	Has difficulties to describe feelings to other people	1	2	3	4	5	6	7
3	Has a limited capacity for imagination, shows little fantasising	1	2	3	4	5	6	7
4	Mainly discusses factual details of events rather than internal experiences and emotions (shows a stimulus-bound externally oriented thinking style)	1	2	3	4	5	6	7

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