

Concurrent Validity of Two Observer-Rated Alexithymia Measures

MARK G. HAVILAND, PH.D., W. LOUISE WARREN, PH.D.

MATT L. RIGGS, PH.D., STEPHEN R. NITCH, PH.D.

The purposes of the present study were to evaluate 1) the correspondence between two observer-rated alexithymia measures, the Observer Alexithymia Scale and the modified Beth Israel Hospital Psychosomatic Questionnaire (BIQ) and 2) the psychometric properties of both instruments. Clinical and counseling psychologists (N=131) used the two instruments to rate outpatients with various psychiatric diagnoses. Correspondence was excellent; the correlation between the two scales was 0.69. Moreover, Observer Alexithymia Scale and modified BIQ scores are reliable (total and subscale alphas were within acceptable ranges), and both theoretical structures were confirmed. Both instruments can be recommended for alexithymia studies requiring observer ratings.

(Psychosomatics 2002; 43:472-477)

Alexithymia is a unique personality construct believed to reflect deficits in emotion processing and regulation.¹ These deficits are expressed in many ways. Highly alexithymic people, for example, have difficulties experiencing and expressing emotions; moreover, they are unimaginative, literal, socially conforming, and utilitarian. They lack insight and humor and have not found personal meaning in life. Finally, in highly alexithymic people, anxiety and tension find outlet in bodily symptoms.² Severe/trait alexithymia is associated with many difficult-to-treat psychiatric disorders (e.g., substance use, posttraumatic stress disorder, and somatoform and eating disorders) and general medical problems (e.g., inflammatory bowel disease, essential hypertension, and functional gastrointestinal disorders).^{1,3}

The most popular measure of alexithymia is the self-report 20-item Toronto Alexithymia Scale.⁴ It is typically

used by itself despite the authors' recommendation that clinicians and researchers also collect collateral self- and observer-rated data. Observer ratings are more difficult to obtain; thus, even the most promising instruments (e.g., the modified Beth Israel Hospital Psychosomatic Questionnaire⁵ and the California Q-Set Alexithymia Prototype²) have seen limited use. The modified Beth Israel Hospital Psychosomatic Questionnaire (BIQ) is best completed by professional raters following a semistructured interview. The California Q-Set Alexithymia Prototype may be used by professional and lay judges; however, the procedure requires at least 45 minutes to an hour to complete. To encourage the use of observer-rated alexithymia scales, Haviland and colleagues⁶ developed the Observer Alexithymia Scale, which is based on alexithymia experts' descriptions of the prototypical alexithymic person (in California Q-Set terms: constricted, anxious, rigid, and withdrawn). The Observer Alexithymia Scale can be completed by professional or lay raters. Moreover, Observer Alexithymia Scale scores are reliable, and the instrument's factor structure has been confirmed in general population and clinical groups.^{6,7} Although one would expect high correlations between the Observer Alexithymia Scale and California Q-Set Alexithymia Prototype similarity scores (a valid alexithymia

Received Sept. 26, 2001; revision received March 7, 2002; accepted March 19, 2002. From the Departments of Psychiatry and Psychology, Loma Linda University; and Western Psychological Services, Los Angeles. Address reprint requests to Dr. Haviland, Department of Psychiatry, Loma Linda University School of Medicine, 11374 Mountain View Ave., Loma Linda, CA 92354-3842; mhaviland@som.llu.edu (e-mail). Copyright © 2002 The Academy of Psychosomatic Medicine.

measure), correspondence between the Observer Alexithymia Scale and other observer-rated alexithymia scales has not been examined. Thus, the primary purpose of the present study was to evaluate correspondence between the Observer Alexithymia Scale and the modified BIQ. Our secondary purpose was to evaluate the psychometric properties of both measures.

METHOD

Survey

We surveyed by mail a random sample of 1,200 doctoral-level clinical and counseling psychologists, all of whom were American Psychological Association members providing patient care. Psychologists were asked to think of a patient (18 years or older) whom they knew very well and to rate the patient on the Observer Alexithymia Scale, the modified BIQ, and two emotional responsivity items. Our first preference was for each to choose a patient with a DSM-IV axis I diagnosis of substance dependence or abuse, panic disorder, posttraumatic stress disorder, somatoform disorder, or eating disorder. Our second preference was for them to choose a patient with acute stress, generalized anxiety disorder, major depressive disorder, or dysthymic disorder. We asked them not to choose patients with delirium or dementia, bipolar disorder, or schizophrenia (because the data would be difficult to interpret) or with an axis II diagnosis of schizoid or antisocial personality disorder (disorders sharing features with, but distinct from, alexithymia). Alexithymia is associated with our "first preference" disorders and not necessarily with the "second preference" disorders. Our goal was to have a good range of alexithymia severity in the final sample.

The psychologists also were asked to provide information about themselves (sex and age) and their target patients (sex, age, race/ethnicity, educational level, and psychiatric diagnoses).

Instruments

The Observer Alexithymia Scale is a 33-item inventory, and each item is rated on a 4-point scale (0 = never or not at all like the person; 1 = sometimes or a little like the person; 2 = usually or very much like the person; and 3 = all of the time or completely like the person). Total scores can thus range from 0 to 99. The scale structure has five factors: distant (poor interpersonal skills and relationships), un insightful (poor stress tolerance, insight, and self-

understanding), somatizing (health worries and physical problems), humorless (uninteresting and boring), and rigid (excessive self-control).

The modified BIQ is a revision of Sifneos' original Beth Israel Questionnaire,⁸ and its 12 items are rated on a 7-point scale, ranging from 1 (not true) to 7 (very true). Possible total score range = 1 to 84. Its structure has two factors: affect awareness (the ability to identify and communicate feelings) and operatory thinking (imaginal activity and externally oriented thinking).

To roughly correspond with the theory of Lane and colleagues⁹ that an alexithymic person cannot consciously experience emotion, we constructed two emotional responsivity items: "When faced with emotion-provoking situations, the person 1) consciously experiences emotional feelings that are consistent with the external situations, and 2) expresses emotions that are consistent with the external situations." Both items were rated on a 4-point scale ranging from 0 (never) to 3 (all of the time) and reverse-scored. (Clearly, this is an imperfect test because in individuals with low levels of emotional awareness, emotion may be experienced consciously as somatic sensations or impulses to action. Thus, the issue is not whether emotions are consciously experienced, but, rather, can they be identified as subjective "feelings"—differentiated, labeled, and described.)

Concurrent Validity

We used Pearson's correlations to evaluate correspondence between the Observer Alexithymia Scale and the modified BIQ and between these scales and the two measures of emotional responsivity.

Psychometric Evaluations

To evaluate internal consistency, we used coefficient alpha, which generally is thought to be a lower reliability boundary.^{10,11}

To evaluate the proposed factor structures of the Observer Alexithymia Scale and the modified BIQ, we used confirmatory factor analysis with EQS software.¹² The Observer Alexithymia Scale measurement model assumed five first-order factors (distant, un insightful, somatizing, humorless, and rigid) with a single second-order factor, alexithymia.^{6,7} The modified BIQ measurement model hypothesized two first-order factors (affect awareness and operatory thinking), with a single second-order factor, alexithymia. (Fukunishi and colleagues¹³ have given at least

partial support for the modified BIQ model with their principal components analyses [varimax rotation] in college student and clinical samples. In both samples, all items loaded >0.37 on their respective subscales [as hypothesized], and internal consistency reliability estimates all were adequate.) We used within-dimension item parcels—two to four items randomly assigned to each parcel—in the tests of both models.

To evaluate adequacy of model fit, we used the chi-square test,¹⁴ the comparative fit index,¹⁵ goodness of fit index,¹⁶ and the root mean square error of approximation.¹⁷ Chi-square tests are evaluated in two ways. First, a non-significant chi-square suggests that the model is a good representation of the data. Second, if the chi-square statistic is significant but less than two times the degrees of freedom, the model is thought to be a good representation of the data.¹⁸ Comparative fit indexes >0.90 are considered adequate. The conventional adequacy standard is >0.85 for the goodness of fit index and <0.10 for the root mean square error of approximation.

RESULTS

Response Rate

Of the 1,200 surveys, 171 (14.3%) were returned, and of those, complete information was available for 131 (for several subjects, psychologists failed to answer questions within the modified BIQ about patients' dream recall, content, and frequency). Of the 131 psychologist respondents, 52.7% ($N=69$) were women, and 47.3% ($N=62$) were men. The average age was 51.6 years ($SD=9.8$).

Patient Characteristics

Of the 131 patients, 70.2% ($N=92$) were women, and 29.8% ($N=39$) were men. The mean age was 39.5 years ($SD=11.2$). Most were white (91.6%, $N=120$), and 46.1% had bachelor's or postgraduate degrees. The most common first-listed diagnoses were anxiety/posttraumatic stress (26.7%), anxiety other than posttraumatic stress (16.1%), eating disorder (14.5%), mood/major depressive disorder (12.2%), substance dependence (10.7%), mood/dysthymic disorder (8.4%), and somatoform disorder (3.0%). Axis II diagnoses were listed for 42 subjects, and the most common personality disorders were borderline (33.3%), dependent (16.7%), and not otherwise specified (16.7%). Axis III diagnoses were listed for 52 subjects. Although we cannot be certain that the sample included

individuals with severe/trait alexithymia, these figures increased our confidence that such was the case.

Descriptive Statistics

Mean total and subscale scores (for all subjects and by sex) on the Observer Alexithymia Scale and modified BIQ are shown in Table 1. The differences between women and men were unremarkable. For example, men had slightly higher total scores than women on the Observer Alexithymia Scale (effect size, i.e., the mean difference divided by the pooled standard deviation¹⁹: $d=0.10$). The largest sex differences were on the distant and somatizing subscales ($d=0.50$ and 0.38 , respectively, with men scoring higher than women on the distant subscale and women scoring higher than men on the somatizing subscale). Men had higher total scores than women on the modified BIQ and higher scores on the affect awareness and operatory thinking subscales. The effect sizes, however, were in the small-to-medium range ($d=0.52$, 0.37 , and 0.57 , respectively).

Concurrent Validity

Scale and subscale intercorrelations are presented in Table 2. The Observer Alexithymia Scale total score showed moderate-to-good correlations with the total modified BIQ score (0.69) and the two emotional responsivity items. Fair-to-moderate correlations were seen between the modified BIQ total score and emotional experiencing (0.43) and emotional expressing (0.36). In general, Observer Alexithymia Scale total and subscale scores were more highly correlated with the modified BIQ's affect awareness subscale (median = 0.55, range = 0.13 to 0.79) than they were with total score (median = 0.50, range = 0.16 to 0.71) and operatory thinking scores (median = 0.36, range = 0.16 to 0.48).

Psychometric Evaluations

For the Observer Alexithymia Scale, coefficient alpha for the total scale was 0.90. Subscale alphas were as follows: distant = 0.87, un insightful = 0.78, somatizing = 0.89, humorless = 0.87, rigid = 0.71. For the modified BIQ, coefficient alpha for the total scale was 0.85. Alphas for the affect awareness and operatory thinking subscales were 0.82 and 0.73, respectively.

Consistent with previous confirmatory factor analysis results for the Observer Alexithymia Scale,^{6,7} the largest sources of model misfit in the initial run were correlated

errors at the parcel level. Two error covariances were added,²⁰ and the relaxed model was rerun. The results are presented in Figure 1. Parcels are represented by the boxes labeled P11, P12, and so forth. The first-order factors are distant, un insightful, somatizing, humorless, and rigid. The second-order factor is alexithymia. The omnibus fit as assessed by the comparative fit index was good (0.935). A goodness-of-fit index of 0.892 and a root mean square error of approximation of 0.096 also suggested good fits. Although the chi-square statistic was significant ($\chi^2 = 104.70$, $df = 48$, $N = 131$, $p < 0.001$), it was just over the desired 2:1 ratio for chi-square to degrees of freedom. All hypothesized pathways were significant. The smallest standardized path coefficient (0.218) was between alexithymia (second-order factor) and somatizing (first-order factor).

The largest sources of model misfit in the preliminary analyses of the modified BIQ model were correlated error values between parcels. Two error covariances were added,²⁰ and the relaxed model was rerun. The final model is shown in Figure 2 (parcels on the left, first-order factors [affect awareness and operator thinking] in the middle, and the second-order factor [alexithymia] on the right). The model represented an excellent fit to the data, with a comparative fit index of 1.0. The chi-square value was not significant ($\chi^2 = 6.06$, $df = 6$, $N = 131$, $p > 0.001$), and it was well below the 2:1 rule. The goodness of fit index (0.986) and the root mean square error of approximation (0.012) confirmed that both were excellent fits. All hypothesized pathways were significant.

DISCUSSION

The Observer Alexithymia Scale appears to be a reliable, valid measure of alexithymia. Coefficient alphas for the total scale in clinical and nonclinical samples are approximately 0.90. Moreover, the scale is based on expert con-

sensus definition of the alexithymia construct, the scale's five-factor structure is replicable, and Observer Alexithymia Scale scores correlated as expected with a second observer-rated alexithymia measure and with measures of emotional responsivity. Next steps in the validation process include correlating Observer Alexithymia Scale scores with established direct measures of alexithymia (California Q-Set Alexithymia Prototype similarity score and the 20-item Toronto Alexithymia Scale) as well as indirect measures (e.g., Levels of Emotional Awareness Scale²¹). The relationship between alexithymia and somatization as measured by the Observer Alexithymia Scale somatizing subscale needs to be clarified.

The modified BIQ also appears to be a reliable and valid alexithymia measure (see also Taylor and colleagues²²). In the present study, coefficient alpha was 0.85, and the theoretical two-factor structure was confirmed.

Among the limits of our study are the low response rate and the corresponding small sample size. We do not know, for example, whether nonresponse bias shifted Observer Alexithymia Scale and modified BIQ scores up or down. This sample (both raters and patients), however, was remarkably similar to a previous clinical sample⁷ drawn from the same population in rater sex (slightly more women than men), patient sex and education (disproportionately female and highly educated), patient diagnoses (a high percentage of first-listed axis I diagnoses were disorders associated with alexithymia, although diagnoses were not confirmed independently), and average Observer Alexithymia Scale total and subscale scores. We cannot say for certain that our results are generalizable. With respect to sample size and our primary objective (i.e., correlating total and subscale scores of the Observer Alexithymia Scale and the modified BIQ), our N was sufficiently large in that we expected at least a moderate correlation. On the other hand, for the confirmatory factor analyses, we fell

TABLE 1. Scores on the Observer Alexithymia Scale and Modified Beth Israel Hospital Psychosomatic Questionnaire (BIQ) for Patients of 131 Clinical and Counseling Psychologists Participating in a Random Survey

Measure	All Patients (N = 131)		Women (N = 91)		Men (N = 40)	
	Mean	SD	Mean	SD	Mean	SD
Observer Alexithymia Scale (33 items)	48.9	14.9	48.5	15.1	50.0	14.8
Distant (10 items)	15.0	5.8	14.1	5.7	17.1	5.7
Uninsightful (8 items)	13.5	4.4	13.6	4.4	13.1	4.5
Somatizing (5 items)	8.0	4.6	8.5	4.5	6.8	4.6
Humorless (5 items)	6.2	3.3	5.9	3.2	6.9	3.4
Rigid (5 items)	6.3	3.3	6.3	3.4	6.2	3.3
Modified BIQ (12 items)	46.9	13.1	44.9	12.8	51.6	12.7
Affect awareness (6 items)	23.2	7.7	22.3	7.5	25.1	7.8
Operator thinking (6 items)	23.8	6.8	22.6	6.5	26.5	6.8

TABLE 2. Correlations Among Scores on the Observer Alexithymia Scale, Modified Beth Israel Hospital Psychosomatic Questionnaire (BIQ), and Emotional Responsivity Items for Patients of 131 Clinical and Counseling Psychologists Participating in a Random Survey										
Measure	Observer Alexithymia Scale Score					Modified Beth Israel Hospital Psychosomatic Questionnaire Score			Emotional Responsivity Item Score	
	Total	Distant	Uninsightful	Somatizing	Humorless	Rigid	Total	Affect Awareness	Operatory Thinking	Item 1 ^a Item 2 ^b
Observer Alexithymia Scale										
Distant	0.81									
Uninsightful	0.79	0.54								
Somatizing	0.47	0.06	0.34							
Humorless	0.67	0.62	0.34	0.02						
Rigid	0.72	0.46	0.45	0.52	0.52					
Modified BIQ total score	0.69	0.71	0.47	0.16	0.54	0.48				
Affect awareness	0.75	0.79	0.56	0.13	0.54	0.51	0.92			
Operatory thinking	0.48	0.48	0.26	0.16	0.38	0.34	0.89	0.63		
Emotional responsivity item 1 ^a	0.52	0.51	0.50	0.12	0.29	0.34	0.43	0.48	0.29	
Emotional responsivity item 2 ^b	0.45	0.40	0.44	0.14	0.22	0.31	0.36	0.38	0.27	0.56

^aConsciously experiences emotional feelings that are consistent with the external situations.

^bExpresses emotions that are consistent with the external situations.

FIGURE 1. Confirmatory Factor Analysis of the Observer Alexithymia Scale, Final Model

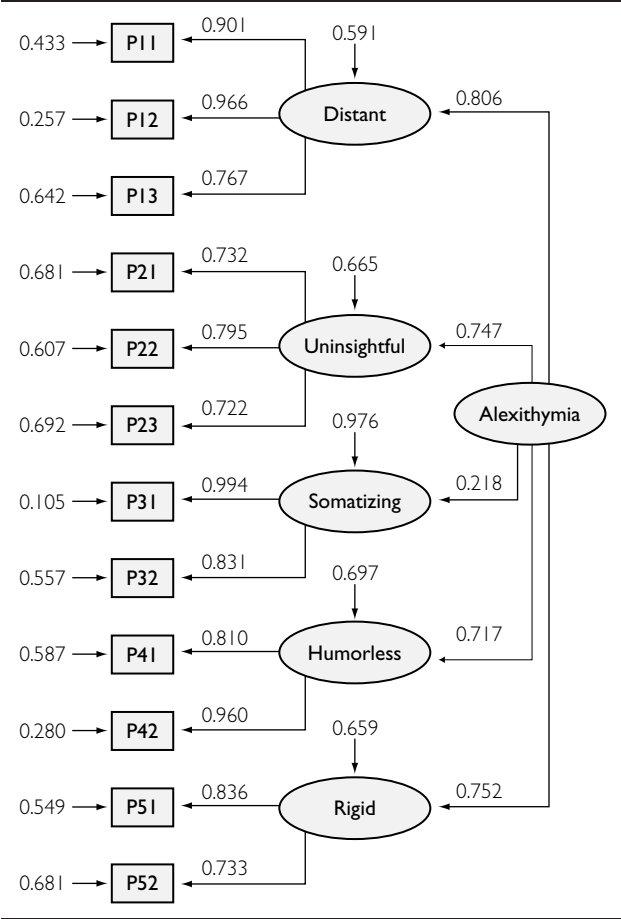
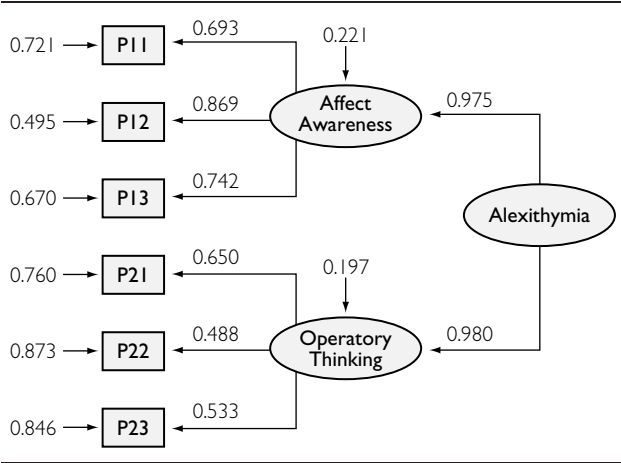


FIGURE 2. Confirmatory Factor Analysis of the Modified Beth Israel Hospital Psychosomatic Questionnaire, Final Model



short of the preferred $N = 200$ (we were within the 5-to-1 subject-to-item ratio in the case of the modified BIQ but outside it with the Observer Alexithymia Scale).²³

Also, the same psychologist rated each patient. Moreover, we have yet to establish interrater reliability. A preferred use of the Observer Alexithymia Scale, however, is for a researcher, for example, to ask several of a subject's acquaintances or friends to rate the subject, to form a composite rating, and to compare the (more reliable) composite rating with other direct and indirect alexithymia measures.

At this juncture, it seems reasonable to conclude that the Observer Alexithymia Scale will be helpful in alexithymia studies that call for an observer-rated measure. It is brief and can be completed by professionals or rela-

tives and acquaintances. Equally reasonable is to recommend the modified BIQ as an observer-rated measure (particularly when professional raters are available to rate patients after a semistructured interview²⁴), for it now has shown relatively good correspondence with the 20-item Toronto Alexithymia Scale^{5,25} and the Observer Alexithymia Scale.

Supported, in part, by the Department of the Army (Cooperative Agreement Number DAMD17-97-2-7016). The content of this paper does not necessarily reflect the position or the policy of the government or the National Medical Technology Testbed. No official endorsement should be inferred.

References

1. Taylor GJ, Bagby RM: An overview of the alexithymia construct, in *The Handbook of Emotional Intelligence*. Edited by Bar-On R, Parker JDA. San Francisco, Jossey-Bass, 2000, pp 40–67
2. Haviland MG, Reise SP: A California Q-Set Alexithymia Prototype and its relationship to ego-control and ego-resiliency. *J Psychosom Res* 1996; 41:597–608
3. Taylor GJ, Bagby RM, Parker JDA: Disorders of Affect Regulation: Alexithymia in Medical and Psychiatric Illness. Cambridge, UK, Cambridge University Press, 1997
4. Bagby RM, Parker JDA, Taylor GJ: The twenty-item Toronto Alexithymia Scale, I: item selection and cross-validation of the factor structure. *J Psychosom Res* 1994; 38:23–32
5. Bagby RM, Taylor GJ, Parker JDA: The Twenty-Item Toronto Alexithymia Scale, II: convergent, discriminant, and concurrent validity. *J Psychosom Res* 1994; 38:33–40
6. Haviland MG, Warren WL, Riggs ML: An observer scale to measure alexithymia. *Psychosomatics* 2000; 41:385–392
7. Haviland MG, Warren WL, Riggs ML, Gallacher M: Psychometric properties of the Observer Alexithymia Scale in a clinical sample. *J Pers Assess* 2001; 77:176–186
8. Sifneos PE: The prevalence of "alexithymic" characteristics in psychosomatic patients. *Psychother Psychosom* 1973; 22:255–262
9. Lane RD, Ahern GL, Schwartz GE, Kaszniak AW: Is alexithymia the emotional equivalent of blindsight? *Biol Psychiatry* 1997; 42:834–844
10. Cronbach LJ: Internal consistency of tests: analyses old and new. *Psychometrika* 1988; 53:63–70
11. Rajaratnam N, Cronbach LJ, Gleser GC: Generalizability of stratified-parallel tests. *Psychometrika* 1965; 30:39–56
12. Bentler PM, Wu EJC: EQS for Windows User's Guide. Encino, Calif, Multivariate Software, 1995
13. Fukunishi I, Nakagawa T, Nakamura H, Kikuchi M, Takubo M: Is alexithymia a culture-bound construct? validity and reliability of the Japanese versions of the 20-Item Toronto Alexithymia Scale and Modified Beth Israel Hospital Psychosomatic Questionnaire. *Psychol Rep* 1997; 80:787–799
14. Bollen KA: Structural Equations With Latent Variables. New York, John Wiley & Sons, 1989
15. Bentler PM: Comparative fit indices in structural models. *Psychol Bull* 1990; 107:238–246
16. Hu L, Bentler PM: Evaluating model fit, in *Structural Equation Modeling: Concepts, Issues, and Applications*. Edited by Hoyle RH. Thousand Oaks, Calif, Sage Publications, 1995, pp 76–99
17. Steiger JH: Structural model evaluation and modification: an interval estimation approach. *Multivariate Behav Res* 1990; 25:173–180
18. Ullman JB: Structural equation modeling, in *Using Multivariate Statistics*. Edited by Tabachnick BG, Fidell LS. New York, HarperCollins, 1996, pp 709–811
19. Cohen J: A power primer. *Psychol Bull* 1992; 112:155–159
20. Byrne BM: Structural Equation Modeling With EQS and EQS/Windows. Thousand Oaks, Calif, Sage Publications, 1994
21. Lane RD, Quinlan DM, Schwartz GE, Walker PA, Zeitlin SB: The Levels of Emotional Awareness Scale: a cognitive-developmental measure of emotion. *J Pers Assess* 1990; 55:124–134
22. Taylor GJ, Bagby RM, Luminet O: Assessment of alexithymia: self-report and observer-rated measures, in *The Handbook of Emotional Intelligence*. Edited by Bar-On R, Parker JDA. San Francisco, Jossey-Bass, 2000, pp 301–319
23. Floyd FJ, Widaman KF: Factor analysis in the development and refinement of clinical assessment instruments. *Psychol Assess* 1995; 7:286–299
24. Nemiah JC, Freyberger H, Sifneos PE: Alexithymia: a view of the psychosomatic process, in *Modern Trends in Psychosomatic Medicine*, vol 3. Edited by Hill OW. London, Butterworths, 1976, pp 430–439
25. Martinez-Sanchez F: The Spanish version of the Toronto Alexithymia Scale (TAS-20). *Clinica y Salud* 1996; 7:19–32